

NATIONAL TRANSMISSION & DESPATCH COMPANY LIMITED



Power System Statistics 47th Edition
December 2022

Power System Planning, NTDC

Striving for Reliable Grid



Acknowledgement

In view of the critical pre-requisite i.e., availability of authentic and updated data for compilation of Power System Statistics, it remains a hectic task which demands commitment and perseverance on the part of load forecasting team of Power System Planning, NTDC. The whole process of this compilation becomes possible with the eager and sustained cooperation of data source entities; special thanks to PPMC (former PEPCO), DISOCs, GENCOs, WAPDA, CPPA-G and K-Electric who extended their utmost support and cooperation for compilation of this 47th edition of Power System Statistics.

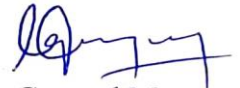
The effort and its output is dedicated to all those who are delivering their best efforts in the best interest of the country.

Long Live Pakistan!

Foreword

A reliable and precise current set of data is critical 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 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 been in great demand. Power System Planning (PSP) NTDC always strives to ensure that accurate data is made available on continuous basis. For wider access, soft copy of this publication is updated on the NTDC web portal <http://ntdc.com.pk>

The Power System Statistics (47th edition) is the updated information of the power sector in Pakistan till 30th June, 2022 including GENCOs (Generation Companies), NTDC (National Transmission and Despatch Company), DISCOs (Distribution Companies), K-Electric and other corporate entities. 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.



General Manager
Power System Planning, NTDC

Preface

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 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.



Masood Ahmad
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 Power 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	Sukkur Electric Power Company
TESCO	Tribal Area Electric Supply Company
T/F	Transformer
WAPDA	Water and Power Development Authority

Power System Planning – 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 Long & Term Load Forecast and Indicative Generation Capacity Expansion Plan
- b. Preparation of Transmission Development Plan
- c. Development of Power Transmission Investment Plan

Setting the Perspective

Major Challenges

- Rapidly increasing load growth and corresponding size of the grid viz-a-viz government's policy to restrict public sector investment in the power sector.
- Optimal quantum of renewable energy in the national energy mix owing to various factors such as i) intermittent nature of renewable energy; ii) lack of a robust electricity grid; iii) extreme local temperature in the wind corridor; iv) Harmonic distortion due to the presence of inverters in the generation mechanism of solar power plants and the newer technology wind power plants.
- Brain drain remains a tough challenge for the PSP NTDC for the last three decades or so i.e. migration of professionals to other departments, companies and / or countries for better opportunities has adversely affected the intellectual strength of the PSP.

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 is 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.**

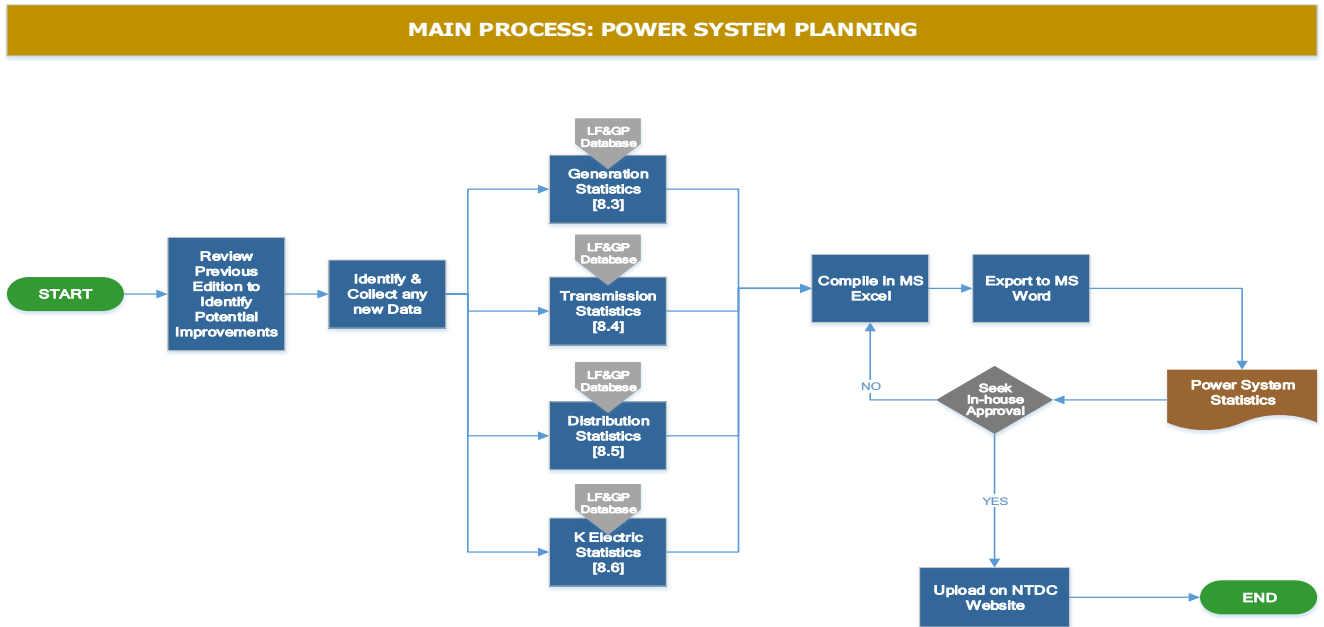
3. Scope and Historical Horizon of PSS

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 2021. However, data prior to 1981 is also available and can be furnished on request.

4. Report Structure

Process for the preparation of the structure of PSS report is provided for quick understanding and reference in the Figure 2-1



Statistics at Glance



Table - A
Installed Generation Capacity (MW)

DESCRIPTION	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Hydel						
WAPDA Hydel	6,902	8,341	9,387	9,389	9,389	9,407
IPPs Hydel	195	342	382	485	485	1,205
Total Hydel	7,097	8,683	9,769	9,874	9,874	10,612
Thermal						
GENCOs	5,477	5,627	5,647	5,747	3,851	3,707
K-Electric	2,295	2,267	2,295	2,295	2,084	2,345
Total Thermal	7,772	7,894	7,942	8,042	5,935	6,052
IPPs (Fossil Fuels)						
IPPs connected with NTDC	12,237	14,798	16,826	16,826	16,539	17,161
IPPs connected with K-Electric	339	443	489	547	559	559
Total IPPs Fossil Fuels	12,576	15,241	17,315	17,373	17,098	17,720
Nuclear						
CHANUPP (PAEC)	1,005	1,345	1,345	1,345	2,490	3,620
KANUPP (PAEC)-KE	75	137	70	70	70	70
Total Nuclear	1,080	1,482	1,415	1,415	2,560	3,690
Renewable						
Solar	400	400	400	400	400	500
Wind	736	985	1,235	1,235	1,235	1,845
Bagasse	281	322	364	364	364	364
Total Renewable	1,417	1,707	1,999	1,999	1,999	2,709
NTDC System	27,233	32,160	35,586	35,791	34,753	37,809
Total K-Electric System	2,709	2,847	2,854	2,912	2,713	2,974
Total Installed Capacity (Country)	29,942	35,007	38,440	38,703	37,466	40,783

* Please note that Jamshoro Unit II & Unit III (400MW), Muzaffargarh Unit V & Unit VI (400MW), Kotri (174MW), Lakhra (150MW), Guddu 1-4 (640MW), Quetta (35MW), GTPS Faisalabad (144MW), SPS Faisalabad (132MW) are retired as per CCoE Decision (Vide Reference letter). Therefore, these units are excluded from GENCOs Installed Capacity.

Table - B
Electricity Generation (GWh)

DESCRIPTION	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Hydel						
WAPDA Hydel	31,084	27,431	31,146	37,431	37,144	33,449
IPPs Hydel	1,016	1,137	1,432	1,795	1,922	2,374
Total Hydel	32,099	28,568	32,578	39,226	39,066	35,822
Thermal						
GENCOs	19,821	17,087	13,590	8,205	7,079	6,596
K Electric	10,147	10,338	10,727	10,358	10,938	7,891
IPPs (Fossil Fuels)						
IPPs connected with PEPCO	47,316	62,487	62,571	60,753	68,896	76,154
IPPs connected with K Electric	1,719	2,403	2,704	2,553	2,964	2,874
Nuclear						
CHANUPP (PAEC)	5,860	8,800	9,038	9,735	10,936	18,304
KANUPP (PAEC)- KE	410	331	130	193	219	46
Renewable						
Solar	657	664	665	657	662	727
Wind	1,339	2,118	3,166	2,457	2,550	4,411
Bagasse	900	1,037	890	616	788	997
Import from Iran	496	555	486	514	498	514
Electricity Generation	107,992	120,761	122,498	121,649	129,978	143,011
K-Electric System	12,276	13,072	13,561	13,104	14,121	10,811
Total Electricity Generation	120,268	133,833	136,059	134,753	144,099	153,822

Table - C
Transmission and Distribution Statistics

DESCRIPTION	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Transmission Statistics						
NTDC Length of 500 kV Transmission Lines (km)	5,219	5,756	6,375	7,414	7,737	8,097
NTDC Length of 220 kV Transmission Lines (km)	9,775	10,562	10,930	11,120	11,420	11,519
NTDC Number of 500 kV Substations/Switching Station	14	16	16	16	16	18
NTDC Number of 220 kV Substations	38	42	45	45	45	49
NTDC 500 kV Transformation Capacity (MVA)	18,150	20,850	22,950	24,000	24,000	25,500
NTDC 220 kV Transformation Capacity (MVA)	25,610	29,110	31,060	31,900	32,220	35,360
Energy Sales (GWh)						
DISCOs Sale	81,551	91,902	93,888	92,790	99,370	107,866
K-Electric	12,981	13,860	14,318	14,277	16,069	16,763
Country	94,532	105,762	108,206	107,067	115,439	124,629
Number of Customers (Millions)						
DISCOs	25	27	28	29	31	33
K-Electric	2	2	2	2	3	3
Country	27	29	31	32	34	36
Electricity Consumption (kWh) per Consumer						
DISCOs Per Consumer	3,189	3,402	3,297	3,097	3,152	3,250
K-Electric Per Consumer	5,353	5,365	5,099	4,825	5,045	4,923
Average Sale Price (Rs. /kWh)						
DISCOs	12.20	13.06	16.00	17.49	18.29	23.03
K-Electric	12.84	12.72	12.83	18.38	19.66	23.30
Losses						
NTDC Transmission Losses (GWh)	2,466	2,923	3,464	3,364	3,673	4,055
NTDC Transmission Losses (%)	2.31	2.43	2.83	2.75	2.82	2.84
Distribution Losses (GWh)	17,833	20,606	20,199	20,120	20,822	21,859
Distribution Losses (%)	17.9	18.3	17.7	17.8	17.3	16.9
Maximum Demand (MW)						
Recorded Maximum Demand (NTDC)	19,020	20,795	21,736	22,696	23,792	24,564
Recorded Maximum Demand (K Electric)	3,270	3,257	3,530	3,604	3,604	3,670

Sources: NTDC, PPMC and K-Electric.

Figure A
Installed Generation Capacity (MW) of NTDC for FY 2021-22

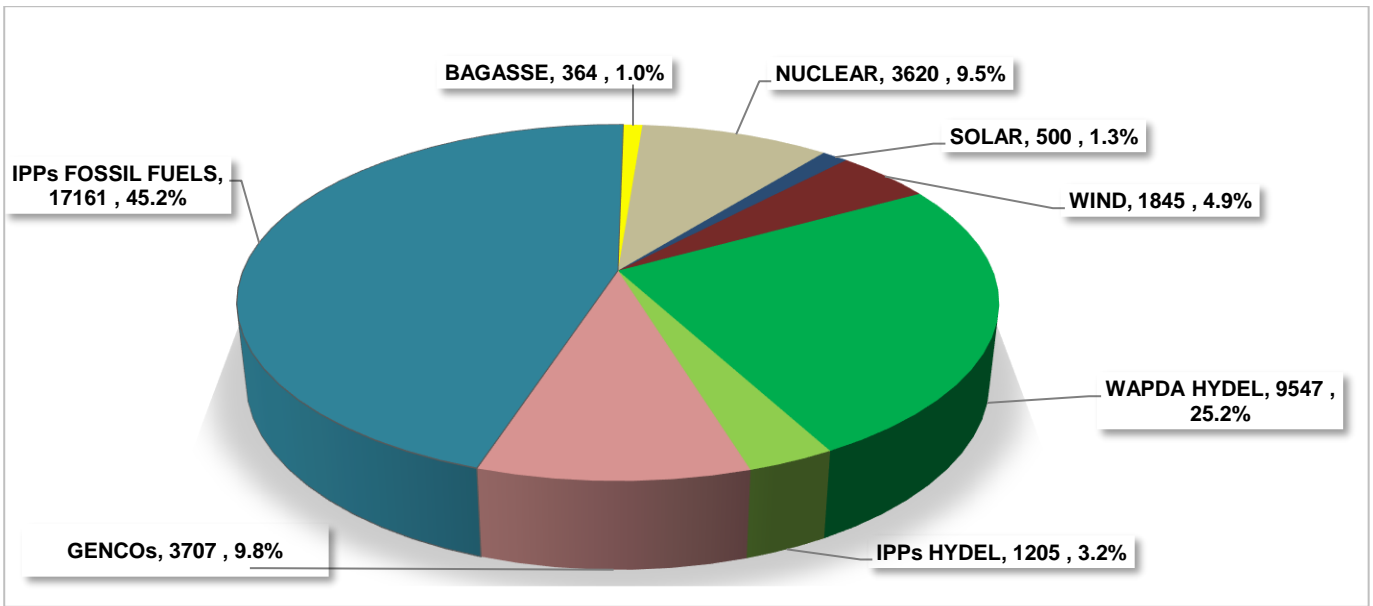
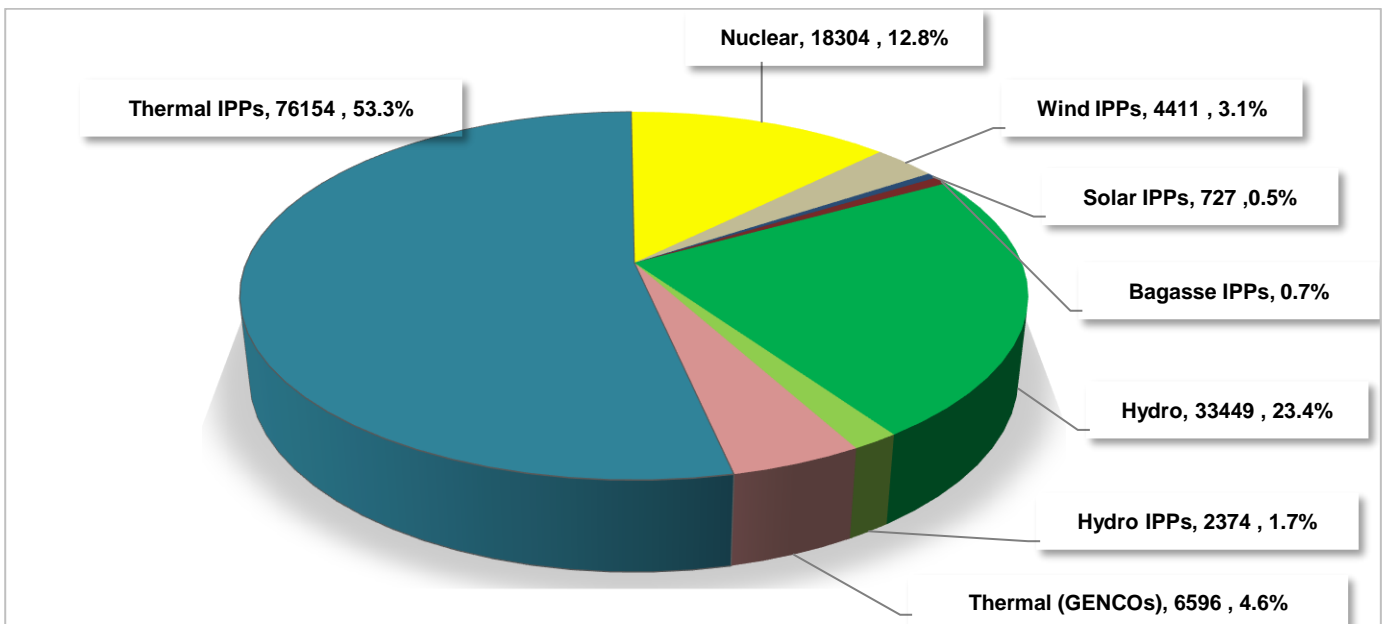
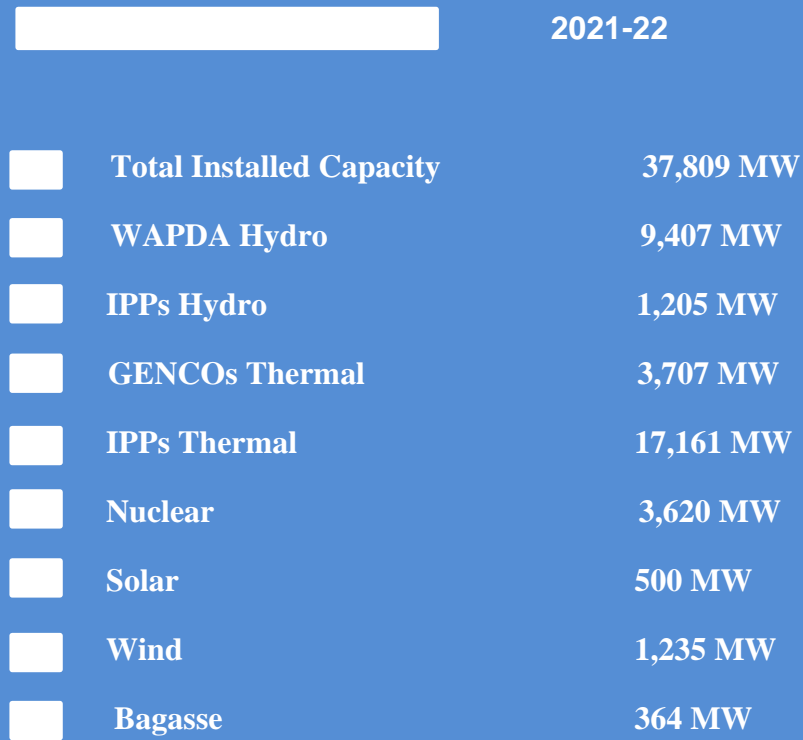


Figure B
Energy Generation (GWh) of NTDC for FY 2021-22



Generation Statistics



Generation Statistics

Table 1.1
Installed Capacity (WAPDA)

Installed Capacity (WAPDA)										
Serial No.	Power Station	Location	Province	Type of Power Station	COD	Installed Capacity			Capability (MW)	
						Generating units	Capacity (MW)	Sub Total (MW)	Summer	Winter
WAPDA Hydel										
1	Tarbela	Tarbela	K.P.K	Reservoir	Apr-1977	2	175	350	3,478	1,955
					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-IV	Tarbela	K.P.K	Reservoir	Jun -2018	1	470	470	1410	724
						1	470	470		
						1	470	470		
3	Mangla	Mangla	A.J. K	Reservoir	Jul -1967	2	100	200	1,000	628
					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		
4	Ghazi Barotha	Ghazi Barotha	Punjab	Run of River	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		

Generation Statistics

Serial No.	Power Station	Location	Province	Type of Power Station	COD	Installed Capacity			Capability (MW)		
						Generating units	Capacity (MW)	Sub Total (MW)	Summer	Winter	
5	Warsak	Warsak	K.P. K	Reservoir	May-1960	2	40	80	243	189	
					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	130	
7	Jinnah Hydel	Mianwali	Punjab	Canal	Mar-2012	1	12	12	96	52	
					Oct-2012	1	12	12			
					Aug -2012	1	12	12			
					Apr - 2013	1	12	12			
					Apr - 2013	1	12	12			
					Oct - 2013	1	12	12			
					Oct - 2013	1	12	12			
					Jul - 2013	1	12	12			
							96				
8	Allai Khwar	Shangla	K.P. K	Canal	Mar-2013	2	61	121	121	61	
9	Khan Khwar	Shangla	K.P. K	Canal	Oct-2010	1	34	34	68	54	
					Nov-2010	1	34	34			
					Dec - 2010	1	4	4			
							72				
10	Dubair Khwar	Shangla	K.P. K	Canal	Mar-2013	2	65	130	130	37	
11	Neelam Jehlam	Muzaffarabad	A.J. K	Run of river	Mar-2018	4	242	969	969	161	
12	Golen Gol	Chitral	K.P. K	Run of river	Jan -2018	3	36	108	108	39	
(1-12)	Total WAPDA Hydel							9,261	9,261	3,960	
WAPDA Small Hydel											
13	Rasul	Rasul	Punjab	Canal	Jul-1952	2	11	22	128	42	
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			
					Jun -1959	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			

Generation Statistics

Serial No.	Power Station	Location	Province	Type of Power Station	COD	Installed Capacity			Capability (MW)	
						Generating units	Capacity (MW)	Sub Total (MW)	Summer	Winter
20	Chitral	Chitral	K.P. K	Canal	1982	2	0.2	0.4		
					Total			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		
					Total			22.4		
23	Ranolia	Kohistan	K.P.K	Canal	Mar-2022	2	8.5	18	18	-
(13-23)	Total WAPDA Small Hydro							146	146	42
IPPs Hydel										
24	Jagran (AJK)	Jagran	A.J.K	Run of River	Oct-2000	5	6	30	29	5
25	Malakand-III	Malakand-III	K.P.K		Nov-2008	3	27	81	70	22
26	New Bong Escape	Mangla	A.J.K		Mar-2013	4	21	84	74	68
27	Patrind	Muzaffarabad	A.J. K		Nov-2017	3	50	150	135	46
28	Daral Khawr	Sawat River	K.P.K		May-2019	2	15	37	30	16
						1	6			
29	Gul Pur	Puunch River	A.J.K		Dec-2019	2	52.5	103	88	56
30	Karot	Rawalpindi	Punjab		Apr-2022	4	180	720	720	540
(24-30)	Total IPPs Hydel							1,205	1,205	753
(1-30)	Total Hydel (WAPDA+IPPs)							10,612	10,612	5,986

Generation Statistics

**Table 1.2
Installed Capacity MW – GENCOs**

Installed Capacity MW – GENCOs												
Serial No.	Power Station	Location	Province	Type of Power Station	COD	Installed Capacity			Derated Capacity (MW)	Fuel Type		
						Generating Units	Capacity (MW)	Total (MW)		Primary	Alternate	
GENCO-I												
1	Jamshoro	Jamshoro	Sindh	Steam	Jan-1990	ST-1	1 x 250	250	200	FO	-	
					Dec-1989	ST-4	1 x 200	200	170	Gas	FO	
Jamshoro Total								450	370	-	-	
Total GENCO-I								450	370			
GENCO-II												
2	Guddu Combine Cycle (5-13)	Guddu	Sindh	Gas Turbine & Combine Cycle	Dec-1985	GT-7	1 x 100	100	928			
					Mar-1986	GT-8	1 x 100	100				
					Apr-1986	GT-9	1 x 100	100				
					Apr-1986	GT-10	1 x 100	100				
					Dec-1987	GT-5	1 x 110	110				
					Mar-1988	GT-6	1 x 110	110				
					Sep-1992	GT-11	1 x 136	136				
					Dec-1992	GT-12	1 x 136	136				
	Guddu 747	Guddu	Sindh	Gas Turbine & Combine Cycle	Dec-2014	ST-14	1 x 249	249	240			HSD
						ST-15	1 x 249	249	240			
ST-16						1 x 249	249	240				
Guddu Total							1,782	1,782	1,649	-	-	
Total GENCO-II								1,782	1,679	-	-	
GENCO-III												
1	Muzaffargarh	Muzaffargarh	Punjab	Steam Turbine	Sep-1993	ST-1	1 X 210	210	829	RFO/Gas	RFO	
					Mar-1994	ST-2	1 X 210	210				
					Feb-1995	ST-3	1 X 210	210				
					Dec-1997	ST-4	1 X 320	320				
Muzaffargarh Total							950	950	730			
2	Nandipur	Gujranwala	Punjab	Combine Cycle	Jan-2015	GT-1	1 X 115	115	110	Gas	HSD	
					Mar-2015	GT-2	1 X 115	115				
					May-2015	GT-3	1 X 115	115				
					Jul-2015	ST-1	1 X 180	180				
Nandipur Total								525	491			
(6-9)	Total GENCO-III							1,475	1,320			
(1-9)	Total GENCOs							3,707	3,339			

Please note that Jamshoro Unit II & Unit III (400MW), Muzaffargarh Unit V & Unit VI (400MW), Kotri (174MW), Lakhra (150MW), Guddu 1-4 (640MW), Quetta (35MW), GTPS Faisalabad (144MW) SPS Faisalabad (132MW) are retired as per CCoE Decision. Therefore, these units are excluded from Installed Capacity of GENCOs.

Generation Statistics

Table 1.3
Installed generation Capacity MW- IPPs

Sr No.	Power Station	Location	Province	Type of Power Station	COD	Installed Capacity				Derated Capacity (MW)	Fuel Type	
						Generating Units	Installed Capacity (MW)	Sub Total (MW)	Total Installed Capacity (MW)		Primary	Alternate
A	IPPs Thermal											
1	Kot Addu (KAPCO)	Kot Addu, Muzaffargarh	Punjab	Gas Turbine	Feb - 1987	GT-1	1 x 105	105	1601	1345	Gas	FO/HSD
					Mar - 1987	GT-2	1 x 100	100				
					May - 1987	GT-3	1 x 100	100				
					Nov - 1988	GT-4	1 x 100	100				
					Dec - 1988	GT-5	1 x 100	100				
					Jan - 1989	GT-6	1 x 100	100				
					Feb - 1989	GT-7	1 x 100	100				
				Combine Cycle	Jan - 1991	GT-8	1 x 100	100				
					Mar - 1991	ST-9	1 x 100	100				
					Oct - 1994	ST-10,11,12	3 x 107	321				
Apr - 1995	GT-13 & 14	2 x 125	250									
Jan - 1997	ST-15	1 x 125	125									
2	HUBCO	HUB	Balochistan	Steam Turbine	Jul - 1996	ST-1	1 x 323	323	1292	1200	RFO	-
					Sep - 1996	ST-2	1 x 323	323				
					Nov - 1996	ST-3	1 x 323	323				
					Mar - 1997	ST-4	1 x 323	323				
3	KEL (KOHINOOR)	Raiwind near Lahore	Punjab	Deisel Engine	June - 1997	DG-1 to 8	8 x 16	125	131	117	RFO	-
				Steam Turbine		ST-1	1 x 6	6				
4	AES Lalpir	Muzaffargarh	Punjab	Steam Turbine	Nov - 1997	1	362	362	362	338	RFO	-
5	AES Pak Gen.	Muzaffargarh	Punjab	Steam Turbine	Feb - 1998	1	365	365	365	335	RFO	-
6	Uch Power -I	Dera Murad Jamali	Balochistan	Gas Turbine	Oct - 2000	GT-1,2,3	3 x 130	390	586	535	Gas	HSD
				Combine Cycle		ST-4	1 X 196	196				

Generation Statistics

Sr No.	Power Station	Location	Province	Type of Power Station	COD	Installed Capacity				Derated Capacity (MW)	Fuel Type	
						Generating Units	Installed Capacity (MW)	Sub Total (MW)	Total Installed Capacity (MW)		Primary	Alternate
7	Rousch	Khanewal	Punjab	Gas Turbine	Dec - 1999	2	152	304	450	389	Gas	HSD
				Combine Cycle		1	146	146				
8	Fauji Kabinwala (FKPCL)	Kabinwala-Khanewal	Punjab	Gas Turbine	Oct - 1999	2	49	98	172	147	Gas	HSD
				Combine Cycle		1	74	74				
9	Saba Power	Sheikhupura	Punjab	Steam Turbine	Dec - 1999	1	136	136	136	112	RFO	-
10	Liberty Power	Dharki	Sindh	Gas Turbine	Sep - 2001	1	146	146	225	208	Gas	HSD
				Combine Cycle		1	79	79				
11	AGL (Attock Gen Ltd.)	Rawalpindi	Punjab	D.G.Sets	Mar - 2009	9	17	150	163	153	RFO	HSD
				Steam Turbine		1	13	13				
12	Atlas Power	Sheikhupura	Punjab	Reci.Engine	Dec - 2009	11	19	208	225	209	RFO	-
				Steam Turbine		1	16	16				
13	Engro Energy	Dharki	Sindh	Gas Turbine	Mar - 2010	1	127	127	217	217	Gas	HSD
				Steam Turbine		1	90	90				
14	Saif Power	Sahiwal	Punjab	Gas Turbine	Apr - 2010	2	75	150	225	197	Gas	HSD
				Steam Turbine		1	75	75				
15	Orient Power	Baloki	Punjab	Gas Turbine	May - 2010	2	75	150	225	197	Gas	HSD
				Steam Turbine		1	75	75				
16	Nishat Power	Multan Road Lahore	Punjab	Reci.Engine	June - 2010	11	17	187	201	191	RFO	-
				Steam Turbine		1	14	14				
17	Nishat Chunian	Multan Road Lahore	Punjab	Deisel Engine	Jul - 2010	11	18	195	209	191	RFO	-
				Steam Turbine		1	14	14				
18	Foundation Power	Dharki	Sindh	Gas Turbine	May - 2011	1	184	184	184	161	Gas	-
19	Sapphire Power	Muridkey	Punjab	Gas Turbine	Oct - 2010	2	70	140	225	196	Gas	HSD
				Steam Turbine		1	73	73				

Generation Statistics

Sr No.	Power Station	Location	Province	Type of Power Station	COD	Installed Capacity				Derated Capacity (MW)	Fuel Type	
						Generating Units	Installed Capacity (MW)	Sub Total (MW)	Total Installed Capacity (MW)		Primary	Alternate
20	Liberty Power Tech.	Faisalabad	Punjab	Deisel Engine	Jan - 2011	11	17	188	202	192	RFO	-
				Steam Turbine		1	14	14				
21	Hubco Narowal	Narowal	Punjab	Deisel Engine	Apr - 2011	11	18	188	220	208	RFO	-
				Combine Cycle		1	16	16				
22	Halmore	Sheikhupura	Punjab	Gas Turbine	Jun - 2011	2	75	150	225	191	Gas	HSD
				Steam Turbine		1	75	75				
23	Uch Power - II	Dera Murad Jamali	Balochistan	Gas Turbine	Apr - 2014	2	133	266	393	370	Gas	-
				Combine Cycle		1	134	134				
24	Davis Energon	Jhang	Punjab	Gas Engine	Jul - 2013	3	4	14	14	10	Gas	-
25	Bhikki (QATPL)	Sheikhupura	Punjab	Steam Turbine	Mar - 2017	1	390	390	1180	1108	Gas	HSD
				Gas Turbine		2	395	790				
26	Sahiwal (Coal)(HRS)	Sahiwal	Punjab	Coal	May - 2017	2	660	1320	1320	1244	Coal	-
27	Haveli Bahadur Shah	Faisalabad	Punjab	GT+ST	May - 2017	3	410	1230	1230	1158	RLNG	HSD
28	Balloki	Lahore	Punjab	GT+ST	Aug - 2017	1	410	410	1222	1147	RLNG	HSD
						2	406	812				
29	Port Qasim Coal	Karachi	Sindh	ST+CB	Nov - 2017	2	660	1320	1320	1243	Coal	-
30	Engro Thar Coal	Thar	Sindh	ST+CB	Mar - 2019	2	330	660	660	545	Coal	-
31	China Hubco Coal	Hub	Balochistan	ST+CB	Apr - 2019	2	660	1320	1320	1249	Coal	-
32	Lucky coal	Port Qasim	Sindh	St+CB	March - 2022	1	660	660	660	606	Coal	-
Total Thermal Fossil Fuels									17,161	15,708		
B	Bagasse											
33	JDW-II (Sadiq Abad)	Sadiqabad	Punjab	Bagasse	Dec-2014	1	26	26	26	24	Bagasse	-
34	JDW-III (Ghotki)	Ghotki	Sindh	Bagasse	Oct.2014	1	27	27	27	24	Bagasse	-
35	Rahim Yar Khan	Rahimyar Khan	Punjab	Bagasse	Mar-2015	2	15	30	30	24	Bagasse	-
36	Chiniot Power	Chiniot	Punjab	Bagasse	Dec-2015	2	32	63	63	63	Bagasse	-

Generation Statistics

Sr No.	Power Station	Location	Province	Type of Power Station	COD	Installed Capacity				Derated Capacity (MW)	Fuel Type	
						Generating Units	Installed Capacity (MW)	Sub Total (MW)	Total Installed Capacity (MW)		Primary	Alternate
37	Fatima Energy (FEL)	Muzaffargarh	Punjab	Bagasse	Feb- 2017	2	60	120	120	120	Bagasse	Coal
38	Hamza sugar	Khan Uur	Punjab	Bagasse	Mar-2017	1	15	15	15	15	Bagasse	-
39	Thal Power Layyah	Layyah	Punjab	Bagasse	Dec-2017	1	25	25	25	25	Bagasse	
40	Almoiz Industries Limited	Mianwali	Punjab	Bagasse	Jan-2019	1	20	20	36	20	Bagasse	
						1	16	16		16	Bagasse	
41	Chanar Energy Limited	Faisalabad	Punjab	Bagasse	Feb-2019	1	22	22	22	22	Bagasse	
Total Bagasse									364	364		
C	Nuclear											
42	C-I (PAEC)	Chashma	Punjab	Nuclear	Oct-2000	1	325	325	325	300	Nuclear	-
43	C-II (PAEC)	Chashma	Punjab	Nuclear	May-2011	1	325	325	325	300	Nuclear	-
44	C-III (PAEC)	Chashma	Punjab	Nuclear	Mar-2016	1	340	340	340	315	Nuclear	-
45	C-IV (PAEC)	Chashma	Punjab	Nuclear	Sep-2017	1	340	340	340	315	Nuclear	-
46	K-2	Karachi	Sindh	Nuclear	May-2021	1	1145	1145	1145	1059	Nuclear	-
47	K-3	Karachi	Sindh	Nuclear	Mar-2022	1	1145	1145	1145	1059	Nuclear	-
Total Nuclear									3,620	3,348		
D	Solar											
48	Quide-e-Azam Solar	Bahawalpur	Punjab	Solar	May-2015	1	100	100	100	100	Solar	-
49	Appolo Solar	Bahawalpur	Punjab	Solar	Mar-2016	1	100	100	100	100	Solar	-
50	Best Green Energy	Bahawalpur	Punjab	Solar	June-2016	1	100	100	100	100	Solar	-
51	Crest Energy Pakistan	Bahawalpur	Punjab	Solar	June-2016	1	100	100	100	100	Solar	-
52	Zhenfa	Layyah	Punjab	Solar	Apr-2022	1	100	100	100	100	Solar	-
Total Solar									500	500		
E	Wind											
53	FFCEL	Jhimpir	Sindh	Wind	May-2013	33	1.5	50	50	50	Wind	-
54	ZEPL (Zorlu)	Jhimpir	Sindh	Wind	June- 2013	47	1.2	56	56	56	Wind	-
55	TGF	Jhimpir	Sindh	Wind	Nov-2014	33	1.5	50	50	50	Wind	-
56	FWEL-I	Gharo	Sindh	Wind	April-2015	20	2.5	50	50	50	Wind	-

Generation Statistics

Sr No.	Power Station	Location	Province	Type of Power Station	COD	Installed Capacity				Derated Capacity (MW)	Fuel Type	
						Generating Units	Installed Capacity (MW)	Sub Total (MW)	Total Installed Capacity (MW)		Primary	Alternate
57	FWEL-II	Gharo	Sindh	Wind	Dec-2014	20	2.5	50	50	50	Wind	-
58	Sapphire Wind	Jhimpir	Sindh	Wind	Nov-2015	33	1.5	50	50	50	Wind	-
59	Metro Wind Power	Jhimpir	Sindh	Wind	Aug-2016	20	2.5	50	50	50	Wind	-
60	Younas Energy	Jhimpir	Sindh	Wind	Aug-2016	20	2.5	50	50	50	Wind	-
61	Act wind	Jhimpir	Sindh	Wind	June- 2016	20	1.5	30	30	30	Wind	-
62	Master Wind Power	Jhimpir	Sindh	Wind	Sep-2016	33	1.5	50	50	50	Wind	-
63	Tenaga Generasi	Gharo	Sindh	Wind	Sep-2016	1	50	50	50	50	Wind	-
64	Gul Ahmed	Jhimpir	Sindh	Wind	Oct-2016	20	2.5	50	50	50	Wind	-
65	Dawood Wind (HDDPL)	Gharo	Sindh	Wind	Sep-2016	33	1.5	50	50	50	Wind	-
66	Sachl wind (SEDL)	Jhimpir	Sindh	Wind	June- 2017	33	1.5	50	50	50	Wind	-
67	UEP Wind	Jhimpir	Sindh	Wind	Sep-2016	66	1.5	99	99	99	Wind	-
68	Artistic Wind	Jhimpir	Sindh	Wind	Mar-2018	29	1.7	50	50	50	Wind	-
69	Jhimpir Power	Jhimpir	Sindh	Wind	Mar-2018	29	1.7	50	50	50	Wind	-
70	Hawa Wind (HEPL)	Jhimpir	Sindh	Wind	Mar-2018	29	1.7	50	50	50	Wind	-
71	TGT Wind	Jhimpir	Sindh	Wind	Jun-2018	29	1.7	50	50	50	Wind	-
72	TGS Energy	Jhimpir	Sindh	Wind	July -2018	29	1.7	50	50	50	Wind	-
73	Tricon Boston (A)	Jhimpir	Sindh	Wind	Aug-2018	29	1.7	50	50	50	Wind	-
74	Tricon Boston (B)	Jhimpir	Sindh	Wind	Sep-2018	29	1.7	50	50	50	Wind	-
75	Tricon Boston (C)	Jhimpir	Sindh	Wind	Sep-2018	29	1.7	50	50	50	Wind	-
76	Zephyr (Ghoro Causter)	Jhimpir	Sindh	Wind	Mar-2019	25	2.0	50	50	50	Wind	-
77	Tapal Wind-2	Thatta	Sindh	Wind	Feb-2022	20	2.5	50	50	50	Wind	-
78	Artistic Wind-2	Thatta	Sindh	Wind	Feb-2022	20	2.5	50	50	50	Wind	-
79	Master Green Wind	Thatta	Sindh	Wind	Aug-2021	20	2.5	50	50	50	Wind	-
80	Tricom Wind	Thatta	Sindh	Wind	Aug-2021	20	2.5	50	50	50	Wind	-
81	Indus Wind	Thatta	Sindh	Wind	Feb-2022	20	2.5	50	50	50	Wind	-

Generation Statistics

Sr No.	Power Station	Location	Province	Type of Power Station	COD	Installed Capacity				Derated Capacity (MW)	Fuel Type	
						Generating Units	Installed Capacity (MW)	Sub Total (MW)	Total Installed Capacity (MW)		Primary	Alternate
82	Din Wind Energy	Thatta	Sindh	Wind	Mar-2022	20	2.5	50	50	50	Wind	-
83	Liberty Wind-I	Thatta	Sindh	Wind	Mar-2022	20	2.5	50	50	50	Wind	-
84	Gul Ahmed Wind-II	Thatta	Sindh	Wind	Mar-2022	20	2.5	50	50	50	Wind	-
85	Metro Wind Power-II	Thatta	Sindh	Wind	Mar-2022	24	2.5	60	60	60	Wind	-
86	Nasda Green Wind	Thatta	Sindh	Wind	Mar-2022	20	2.5	50	50	50	Wind	-
87	Laked Side Wind	Thatta	Sindh	Wind	Mar-2022	20	2.5	50	50	50	Wind	-
88	Liberty Wind-II	Thatta	Sindh	Wind	Mar-2022	20	2.5	50	50	50	Wind	-
Total WIND									1,845	1,845		
IPPs Total connected with NTDC system									23,489	21,766		
Total Installed Capacity of NTDC System									37,809	35,716		

Table 1.4
Source wise Installed Capacity (MW)

Year	Public		Independent Power Producers (IPPs)						Total
	Hydro	GENCOs	Hydro	Thermal	Solar	Wind	Nuclear	Bagasse	
1981-82	1,847	1,407							3,254
1982-83	2,547	1,407							3,954
1983-84	2,547	1,407							3,954
1984-85	2,897	1,442							4,339
1985-86	2,897	2,052							4,949
1986-87	2,897	2,452							5,349
1987-88	2,897	2,652							5,549
1988-89	2,897	3,052							5,949
1989-90	2,897	3,512							6,409
1990-91	2,897	4,126							7,023
1991-92	3,329	4,134							7,463
1992-93	3,761	4,361							8,122
1993-94	4,725	4,926							9,651
1994-95	4,825	5,738							10,563
1995-96	4,825	6,238							11,063
1996-97	4,825	5,070		3,061					12,956
1997-98	4,825	5,070		3,788					13,683
1998-99	4,825	5,070		3,905					13,800
1999-00	4,825	4,871		4,748					14,444
2000-01	5,009	4,740	30	5,430			325		15,534
2001-02	5,009	4,740	30	5,715			325		15,819
2002-03	5,009	4,740	30	5,715			325		15,819
2003-04	6,463	4,834	30	5,715			325		17,367
2004-05	6,463	4,834	30	5,743			325		17,395
2005-06	6,463	4,834	30	5,743			325		17,395
2006-07	6,444	4,834	30	5,893			325		17,526
2007-08	6,444	4,899	111	6,048			325		17,827
2008-09	6,444	4,900	111	6,242			325		18,022
2009-10	6,444	4,829	111	7,183			325		18,892
2010-11	6,516	4,829	111	8,880			665		21,001
2011-12	6,516	4,841	111	8,381			665		20,514
2012-13	6,733	4,841	195	8,381		50	665		20,865
2013-14	6,902	5,762	195	8,408	0	106	665	24	22,063
2014-15	6,902	5,622	195	8,426	100	256	665	70	22,236
2015-16	6,902	5,477	195	8,410	400	306	665	146	22,501
2016-17	6,902	5,477	195	12,237	400	736	1,005	281	27,233
2017-18	8,341	5,627	342	14,798	400	985	1,345	322	32,160
2018-19	9,387	5,647	382	16,826	400	1,235	1,345	364	35,586
2019-20	9,389	5,747	485	16,826	400	1,235	1,345	364	35,791
2020-21	9,389	3,851	485	16,539	400	1,235	2,490	364	34,753
2021-22	9,407	3,707	1,205	17,161	500	1,845	3,620	364	37,809

**Table 1.5
Plant Wise Energy Generation (GWh)**

Sr.No	Power Station	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
A. WAPDA Hydel							
1	Tarbela	15,050	13,355	10,637	11,924	12,610	10,984
2	Tarbela- Extension IV			2,311	5,499	3,428	3,284
3	Mangla	5,348	4,142	3,861	4,686	5,405	4,283
4	Ghazi Barotha	6,885	6,409	6,547	6,552	6,893	6,836
5	Warsak	984	913	1,001	1,105	1,075	942
6	Chashma Hydro	890	756	768	752	776	800
7	Jinnah Hydel	293	230	225	182	242	263
8	Allai Khwar	397	276	462	475	449	379
9	Khan Khwar	199	171	237	279	236	166
10	Dubair Khwar	590	515	591	612	643	619
11	Neelam Jehlam	-	269	3,960	4,842	4,789	4,307
12	Golen Gol	-	-	80	89	85	141
13	Rasul	86	66	72	37	80	62
14	Dargai	105	96	112	104	116	91
15	Nandipur	43	43	37	35	34	30
16	Shadiwal	31	26	28	14	33	29
17	Chichoki Mallian	34	31	29	30	28	22
18	Kurru Garhi	18	17	14	14	21	12
19	Renala	2	2	2	2	2	2
20	Chitral	4	3	4	3	3	2
21	Gomal Zam	0	0	30	55	63	58
22	Jabban (Malakand)	124	105	136	139	136	136
23	Ranolia				0	0	2
	Total WAPDA Hydel	31,084	27,431	31,146	37,431	37,144	33,449
B. IPPs Hydel							
24	Jagran (AJK)	128	119	125	101	120	126
25	Malakand-III (SHYDO)	462	381	354	409	321	354
26	Laraib (NEW BONG)	427	362	399	384	465	413
27	Patrind		275	527	566	624	562
28	Daral Khawr			26	153	134	130
29	Gul Pur				183	257	244
30	Karot Hydel				0	0	545
	Total IPPs Hydel	1,016	1,137	1,432	1,795	1,922	2,374
	Total Hydel	32,099	28,568	32,578	39,226	39,066	35,822
C Thermal GENCO-I							
31	Jamshoro	3,608	2,003	995	249	235	279
32	Kotri	352	100	40	0	0	0
33	Lakhra	124	5	0	0	0	0
	Total GENCO-I	44,13	2,109	5103	249	235	279
	GENCO-II						

Generation Statistics

Sr.No	Power Station	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
34	Guddu 1-4	226	285	12	0	0	0
35	Guddu 5-13	3,300	4,730	4,374	1639	1742	1570
36	Guddu 747	4,575	3,946	5,234	4447	3223	2705
37	Quetta	53	0	0	0	0	0
	Total GENCO-II	8,101	8,960	9,619	6,086	4,964	4,275
	GENCO-III						
38	Muzaffargarh	5,801	3,440	991	341	306	236
39	Multan	0	0	0	0	0	0
40	GTPS Faisalabad	226	110	157	0	16	107
41	SPS Faisalabad	122	7	0	0	0	0
42	Shahdra	0	0	0	0	0	0
43	Nandipur Power Plant	1,434	2,460	1,786	1529	1558	1699
	Total GENCO-III	7,582	6,019	2,935	1,870	1,880	2,042
	Total GENCOs	19,820	17,089	13,590	8,205	7,079	6,596
D.	IPPs Thermal						
44	KAPCO	7,340	7,437	4,967	3,477	3,559	4,962
45	HUBCO	6,791	5,206	832	35	187	1,226
46	KEL (Kohinoor Energy)	792	645	387	365	340	516
47	AES Lalpir	1,497	1,088	613	186	622	1,023
48	AES Pak Gen.	1,624	1,246	495	149	445	1,301
49	HCPC (Habibullah)	767	884	715	108	0	0
50	Uch Power-I	4,413	4,448	3,898	4,091	4,094	4,301
51	Rousch	2,455	2,597	1,039	223	283	498
52	FKPCL (Fauji Kabirwala)	1,091	1,012	562	347	390	358
53	Saba Power	476	468	226	51	122	331
54	Japan Power	0	0	0	0	0	0
55	Liberty Power (TNB)	1,428	1,040	1,306	904	1,000	1,053
56	AEL	188	145	22	4	13	0
57	Davis Energon	60	9	3,021	0	0	0
58	AGL (Attock Generation Ltd.)	1,136	914	0	315	384	722
59	Atlas Power	1,338	1,248	518	260	512	1,008
60	Engro Energy	1,731	1,669	671	704	683	794
61	Saif Power	905	842	1,388	476	639	735
62	Orient Power	955	842	830	338	624	839
63	Nishat Power	1,239	1,171	878	278	523	791
64	Nishat Chunion Power	1,315	1,100	675	351	538	882
65	Foundation Power	1,267	1,396	599	786	1,015	1,278
66	Sapphire	961	816	1,334	300	569	782
67	Liberty Tech.	1,340	1,176	809	458	607	923
68	HUBCO Narowal	1,332	1,200	777	338	496	868
69	Halmore	553	871	636	348	520	676
70	Uch Power-II	2,736	2,600	613	2,145	2,343	2,833

Generation Statistics

Sr.No	Power Station	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
71	Bhikki (QATPL)	560	3,657	6,150	5,199	7,122	6,091
72	Sahiwal Coal (HSR)	869	8,439	8,219	6,164	7,348	6,887
73	Haveli Bahadar Shah	129	2,848	7,096	7,042	7,683	7,515
74	Reshma Power	8	50	15	2	0	0
75	Gulf Power	2	0	0	0	0	0
76	Balloki		2,113	5,185	5,908	6,031	7,190
77	Port Qasim Coal		3,312	7,562	8,979	8,369	7,475
78	Engro Thar Coal			272	4,280	3,908	3,678
79	China HUBCO Coal			260	6,143	7,927	6,767
80	Lucky Coal					0	1,773
81	Punjab Thermal					0	79
	Total IPPs Fossil Fuels	47,316	62,487	62,571	60,753	68,896	76,154
E	Bagasse						
82	JDW-II (Sadiqabad)	178	182	188	162	177	169
83	JDW-III (Ghotki)	166	197	181	129	144	137
84	RYKML	122	156	141	74	74	97
85	Chiniot Power	298	347	195	81	162	224
86	Fatima	113	32	0	52	77	169
87	Hamza sugar	24	72	61	45	40	61
88	Thall Power (Layyah)		51	66	36	46	74
89	AlMoiz Industries Limited			50	15	30	18
90	Chanar Energy Limited			9	22	38	48
	Total Bagasse	900	1,037	890	616	788	
F	Nuclear						
91	C-I	2,143	2,448	2,140	2,042	2,264	2,534
92	C-II	2,329	2,316	2,278	2,647	2,084	2,456
93	C-III	1,388	2,264	2,498	2,335	2,415	2,333
94	C-IV		1,772	2,122	2,711	2,467	2,189
95	K-2				0	1,706	6,826
96	K-3				0	0	1,965
	Total Nuclear	5,860	8,800	9,038	9,735	10,936	18,304
G	Solar						
97	Quaid-e-Azam Solar	160	163	165	165	166	165
98	Apolo Solar	163	166	167	163	165	169
99	Best Green Solar	167	168	166	163	164	167
100	Crest Energy Solar	167	168	168	165	167	169
101	Zhenfa Solar			-	-	-	57
	Total Solar	657	664	665	657	662	
H	Wind						
102	FFCEL	123	115	116	118	91	114
103	ZEPL (Zorlu)	154	143	144	144	109	129
104	TGF (Three Georees)	140	128	129	135	99	124
105	FWEL-I Wind	108	106	106	111	96	114

Generation Statistics

Sr.No	Power Station	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
106	FWEL-II Wind	120	122	122	128	104	142
107	Saphire Wind	149	135	135	89	104	130
108	Metro Wind Power	85	139	139	153	120	148
109	Younas Wind	89	128	128	90	108	135
110	Tapal Wind (TWEPL)	61	90	90	65	75	88
111	Master Wind (MWEL)	77	135	135	97	112	138
112	Tapal Wind-II	63	0	0	0	0	87
113	Gul Ahmed Wind	72	129	129	91	110	138
114	Artistic Wind-II	35	0	0	0	0	85
115	Sachal Wind	38	125	125	142	108	131
116	UEPL Wind	25	244	244	179	204	254
117	Artistic Wind		191	191	133	166	193
118	Jhimpir Wind		167	167	119	144	166
119	Hawa Wind (HEPL)		167	167	115	141	170
120	TGT Wind		134	134	95	112	143
121	TGS ENERGY		131	131	93	109	139
122	TRICON BOSTON (A)		134	134	125	150	181
123	TRICON BOSTON (B)		107	107	118	144	177
124	TRICON BOSTON (C)		110	110	118	144	179
125	Master Green Wind		0	0	0	0	126
126	Tricom Wind		-	-	-	-	134
127	Tenaga Wind		111	111	0*	0*	92*
128	Dawood Wind		116	116	0*	0*	90*
129	Zephyr Wind		57	57	0*	0*	137*
130	Indus Wind		-	-	-	-	86
131	Din Wind Energy		-	-	-	-	73
132	Liberty Wind-I		-	-	-	-	68
133	Gull Ahmed Wind-II		-	-	-	-	78
134	Metro Wind-II		-	-	-	-	48
135	Nasda Green Wind		-	-	-	-	59
136	Laked Side Wind		-	-	-	-	72
137	Liberty Wind-II			-	-	-	43
	Total Wind IPPs	1,339	2,118	3,166	2,457	2,550	4,411
	Total IPPs	56,071	75,105	76,330	74,218	83,833	100,593
	Import From K-Electric	4	31	44	41	13	6
	Total Generation	107,995	120,792	122,541	121,691	129,991	143,017
	Export To K-Electric	5,203	5,147	5,127	5,049	5,776	8,954
	Import from Iran	496	555	486	514	498	514

Source: NPCC DLR as of 30th June 2022.

* Energy exported to K-Electric is not included in Wind and Total Energy generation of NTDC system.

Table 1.6
Source Wise Energy Generation (GWh)

Year	Public		IPPs		Bagasse	Nuclear	Renewable		Import From		Total
	Hydro	GENCOS	Hydro	Thermal			Solar	Wind	KE	Iran	
1981-82	9,526	4,660	0	0							14,220
1982-83	11,366	4,554	0	0							15,925
1983-84	12,822	4,737	0	0							17,596
1984-85	12,245	5,907	0	0							18,826
1985-86	13,804	6,661	0	0							20,936
1986-87	15,251	7,058	0	0							22,500
1987-88	16,689	9,015	0	0							25,820
1988-89	16,196	9,555	0	0							25,783
1989-90	16,925	12,153	0	0							29,342
1990-91	18,298	13,653	0	0							31,992
1991-92	18,647	16,010	0	0							35,120
1992-93	21,111	15,157	0	0							36,785
1993-94	19,436	17,494	0	0							37,281
1994-95	22,858	17,158	0	0							40,224
1995-96	23,206	18,457	0	161							42,122
1996-97	20,858	17,068	0	10,740							48,757
1997-98	22,060	15,200	0	13,580							51,001
1998-99	22,448	13,769	0	15,326							51,559
1999-00	19,288	19,064	0	17,418							55,794
2000-01	17,196	16,798	63	22,773		1,565					58,414
2001-02	18,941	18,620	115	21,458		1,662					60,814
2002-03	22,253	19,570	97	20,658		1,386					64,026
2003-04	27,372	21,012	105	18,931		1,559			36	73	69,015
2004-05	25,588	22,181	83	23,233		2,295			12	109	73,392
2005-06	30,751	22,479	104	26,535		2,170			3	146	82,042
2006-07	31,846	21,587	96	32,163		1,944			5	171	87,641
2007-08	28,536	20,497	131	34,439		2,455			65	199	86,124
2008-09	27,636	19,568	547	35,340		1,058			33	227	84,182
2009-10	27,927	565	19,632	38,452		2,095			20	249	88,692
2010-11	31,685	305	13,044	42,342	0	2,930	0		26	269	90,332
2011-12	28,166	436	12,652	43,711	0	4,413	0	6	0	296	89,384
2012-13	29,326	662	13,838	40,072	0	3,668	0	38	18	375	87,621
2013-14	31,084	989	14,248	43,721	307	4,431	28	230	1	419	94,710
2014-15	31,525	1,020	14,223	44,441	307	5,033	231	464	13	443	97,054
2015-16	33,151	1,132	17,294	44,650	547	3,885	657	780	9	463	101,679
2016-17	31,084	1,016	19,821	47,316	900	5,860	664	1,339	4	496	107,996
2017-18	27,431	1,137	17,087	62,487	1,037	8,800	665	2,118	31	555	120,792
2018-19	31,146	1,432	13,590	62,571	890	9,038	657	3,166	44	486	122,542
2019-20	37,431	1,795	8,205	60,753	616	9,735	662	2,457	41	514	121,690
2020-21	37,144	1,922	7,079	68,896	788	10,936	727	2,550	13	498	129,991
2021-22	33,449	2,374	6,596	76,154	997	18,304	0	4,411	6	514	143,017

Note: Import from Iran is not included in total Generation.

Table 1.7
Station Wise Plant Factor (%)

Serial No.	Fiscal Year	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
A.	WAPDA Hydel							
1	Tarbela	52.5	49.4	43.8	34.9	39.1	41.4	36.1
2	Tarbela Extension-IV	0.0	0.0	0.0	18.8	44.5	27.8	26.6
3	Mangla	78.4	61.0	47.3	44.1	53.5	61.7	48.9
4	Ghazi Barotha	52.9	54.2	50.5	51.5	51.6	54.3	53.8
5	Warsak	43.4	46.2	42.9	47.0	51.9	50.5	44.3
6	Chashma Low Head	55.7	55.2	46.9	47.6	46.6	48.2	49.6
7	Jinnah Hydel	35.2	34.8	27.4	26.7	21.7	28.8	31.3
8	Allai Khwar	53.6	37.4	26.0	43.6	44.8	42.4	35.7
9	Khan Khwar	6.0	31.5	27.1	37.6	44.3	37.4	26.3
10	Duber Khwar	57.5	51.8	45.2	51.9	53.7	56.5	54.4
11	Neelam Jehlam	0.0	0.0	3.2	46.7	57.0	56.4	50.7
12	Golen Gol	0.0	0.0	0.0	8.6	9.4	9.0	14.9
13	Rasul	49.8	44.9	34.0	37.3	19.0	41.4	32.1
14	Dargai	65.4	59.9	54.6	64.1	59.5	66.0	51.8
15	Nandipur	33.2	35.2	34.7	30.3	28.8	27.3	24.7
16	Shadiwal	20.9	25.3	21.1	23.1	11.6	26.6	23.4
17	Chichoki Mallian	29.9	30.0	27.6	25.5	26.7	24.3	19.4
18	Kurram Garhi	66.8	52.3	49.3	40.6	39.5	58.8	33.6
19	Renala	23.2	25.1	26.3	25.0	23.8	22.9	21.3
20	Chitral	41.1	47.8	39.2	40.1	34.8	30.3	24.6
21	Gomal Zam	6.3	0.0	0.0	19.7	36.3	41.1	38.2
22	Malakand/Jabban	71.6	64.4	54.6	70.6	72.1	70.4	70.7
23	Ranolia	0.0	0.0	0.0	0.0	0.0	0.0	1.0
B	IPPs Hydel							
24	Jagran	56.4	48.5	45.4	47.5	38.3	45.8	47.9
25	Malakand iii	76.8	60.1	53.7	56.3	57.6	45.2	49.9
26	New bong escape	59.6	62.7	49.2	48.2	52.2	63.3	56.1
27	Patrind	0.0	0.0	21.4	40.1	43.1	47.5	42.8
28	Daral khwar	0.0	0.0	0.0	8.0	47.1	41.7	40.7
29	Gul pur	0.0	0.0	0.0	0.0	20.3	28.5	27.0
30	Karot hydel	0.0	0.0	0.0	0.0	0.0	0.0	8.6
C	Thermal GENCO-I							
31	TPS Jamshoro	48.4	48.5	26.9	13.4	3.3	6.0	7.1
32	GTPS Kotri	39.5	23.1	6.6	2.7	-	-	-
33	Lakhra F.B.C	33.8	28.3	1.2	0.0	-	-	-
34	TPS Quetta	32.37	36.40	17.42	-	-	-	-
	GENCO-II							
35	TPS Guddu (1-4)	2.6	4.0	5.1	0.2	0.0	0.0	0.0
36	TPS Guddu (5-13)	30.1	45.4	53.2	48.2	18.1	19.2	17.3
37	Guddu 747	54.6	69.9	60.3	80.0	68.0	49.2	41.3
	GENCO-III							

Generation Statistics

Serial No.	Fiscal Year	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
38	TPS Muzaffargarh	44.1	49.1	29.1	8.4	2.9	3.7	2.8
39	SPS Faisalabad	8.3	10.6	0.6	-	-	-	-
40	GTPS Faisalabad	13.5	10.6	5.2	12.5	0.0	1.2	0.0
41	Nandipur	35.5	38.5	66.1	48.0	33.2	33.9	36.9
D	IPPs Thermal							
42	KAPCO	47.0	52.4	53.1	35.4	24.8	25.4	35.4
43	HUBCO	66.7	60.0	46.0	7.3	0.3	1.7	10.8
44	KEL (Kohinoor Energy)	74.2	69.0	56.2	33.8	31.8	29.6	44.9
45	AES Lalpir	57.5	47.2	34.3	19.3	5.9	19.6	32.3
46	AES Pak Gen.	26.0	50.8	39.0	15.5	4.7	13.9	40.7
47	SEPCOL (Southern Electric)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
48	HCPC (Habibullah)	44.7	62.6	72.1	58.3	8.8	0.0	0.0
49	Uch Power-I	82.2	86.0	86.7	75.9	79.7	79.7	83.8
50	Rousch	75.6	62.3	65.9	26.4	5.7	7.2	12.6
51	FKPCL (Fauji Kabirwala)	80.4	79.3	73.6	37.3	23.0	25.9	23.7
52	Saba Power	5.5	39.9	39.2	19.0	4.3	10.3	27.7
53	Japan Power	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54	Liberty Power (TNB)	72.4	69.4	50.5	66.3	45.9	50.7	53.4
55	AEL	64.5	69.2	53.4	8.1	1.4	4.9	0.0
56	Davis Energon	64.8	53.1	7.9	0.0	0.0	0.0	0.0
57	AGL (Attock Generation)	82.6	79.6	64.0	36.2	22.0	26.9	50.6
58	Atlas Power	68.9	69.7	65.1	35.0	13.6	26.7	52.5
59	Engro Energy	61.7	87.4	84.3	70.1	35.6	34.5	41.8
60	Saif Power	55.2	45.9	42.7	42.1	24.2	32.4	37.3
61	Orient Power	58.7	48.5	42.7	44.6	17.2	31.7	42.6
62	Nishat Power	72.6	70.8	66.8	38.1	15.7	29.6	44.7
63	Nishat Chunian Power	69.0	75.1	62.8	32.7	19.2	29.4	48.2
64	Foundation Power	75.3	78.6	86.6	82.8	48.7	63.0	79.3
65	Sapphire	52.1	48.8	41.4	41.1	15.2	28.9	39.7
66	Liberty Tech.	70.6	75.7	66.4	43.9	25.9	34.3	52.1
67	HUBCO Narowal	58.9	67.6	60.9	32.3	17.2	25.2	44.0
68	Halmore	46.5	28.0	44.2	31.1	17.7	26.4	34.3
69	Uch Power-II	67.8	79.5	75.5	87.8	62.3	68.1	82.3
70	Bhikki (QATPL)	0.0	5.4	34.8	57.1	48.2	68.9	58.9
71	Sahiwal Coal (HSR)	0.0	7.5	73.0	71.1	53.3	63.5	59.6
72	Haveli Bahadar Shah	0.0	1.2	26.4	65.9	65.4	71.3	69.7
73	Reshma Power	0.0	1.0	5.9	1.8	0.2	0.0	0.0
74	Gulf Power	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75	Balloki	0.0	0.0	19.7	48.4	55.1	56.3	67.1
76	Port Qasim Coal	0.0	0.0	28.6	65.4	77.6	72.4	64.6
77	Engro Thar Coal	0.0	0.0	0.0	4.7	74.0	67.6	63.6
78	China HUBCO Coal	0.0	0.0	0.0	2.3	53.1	68.6	58.5
79	Lucky Coal	0.0	0.0	0.0	0.0	0.0	0.0	30.7
80	Punjab Thermal	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Generation Statistics

Serial No.	Fiscal Year	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
E	Bagasse							
81	JDW-II	69.5	77.9	79.7	82.4	71.1	77.8	74.4
82	JDW-III	63.7	70.1	83.2	76.6	54.6	61.1	58.0
83	RYKML	29.3	46.3	59.2	53.7	28.0	28.1	37.0
84	Chiniot Power	29.1	53.9	62.9	35.3	14.7	29.3	40.6
85	Fatima Energy	0.0	10.7	3.1	0.0	5.0	7.3	16.0
86	Hamza sugar	0.0	18.8	55.2	46.4	34.4	30.4	46.5
87	Thall Power (Layyah)	0.0	0.0	14.1	30.1	16.3	21.0	33.9
88	Almoiz Industries Limited	0.0	0.0	0.0	15.7	4.7	9.4	5.6
89	Chanar Energy Limited	0.0	0.0	0.0	4.6	11.6	19.8	24.8
F	Nuclear							
90	C-I (PAEC)	52.8	75.3	86.0	75.2	71.7	79.5	89.0
91	C-II (PAEC)	79.9	78.2	77.8	76.5	88.9	70.0	86.3
92	C-III (PAEC)	0.0	46.6	76.0	83.9	78.4	81.1	78.3
93	C-IV (PAEC)	0.0	0.0	59.5	71.2	91.0	82.8	73.5
94	K-2	0.0	0.0	0.0	0.0	0.0	17.0	68.1
95	K-3	0.0	0.0	0.0	0.0	0.0	0.0	19.6
G	Solar							
96	Quaid-e-Azam Solar	18.4	18.2	18.6	18.8	18.9	18.9	18.8
97	Appolo Solar	5.8	18.6	19.0	19.0	18.6	18.8	19.3
98	Best Green Solar	1.1	19.0	19.1	18.9	18.6	18.7	19.1
99	Crest Energy Solar	1.1	19.1	19.1	19.1	18.9	19.1	19.3
100	Zhenfa Solar	0.0	0.0	0.0	0.0	0.0	0.0	6.5
H	Wind							
101	FFCEL	31.2	28.2	26.3	26.4	27.0	20.8	26.1
102	ZEPL (Zorlu)	33.9	31.3	29.2	29.4	29.3	22.3	26.2
103	TGF (Three Georees)	34.2	32.0	29.2	29.5	30.9	22.6	28.2
104	FWEL-I Wind	26.1	24.7	22.5	24.2	25.3	22.0	25.9
105	FWEL-II Wind	28.1	27.4	26.2	28.0	29.2	23.7	32.3
106	Saphire Wind	20.8	34.1	29.0	30.8	20.3	24.0	30.0
107	Metro Wind Power	0.0	19.4	32.0	31.6	35.0	27.5	33.8
108	Younas Wind	0.0	20.3	29.1	29.3	20.5	24.8	30.9
109	Tapal Wind (TWEPL)	0.0	22.9	32.9	34.1	24.6	28.4	33.6
110	Master Wind (MWEL)	0.0	17.5	28.9	30.8	22.1	25.5	31.4
111	Tapal Wind-II	0.0	0.0	0.0	0.0	0.0	0.0	19.9
112	Gul Ahmed Wind	0.0	16.5	29.0	29.4	20.9	25.2	31.5
113	Artistic Wind-II	0.0	0.0	0.0	0.0	0.0	0.0	19.5
114	Sachal Wind	0.0	8.6	29.2	28.5	32.4	24.6	29.9
115	UEPL Wind	0.0	5.8	27.1	28.1	20.7	23.5	29.3
116	Artistic Wind	0.0	0.0	19.4	43.7	30.3	37.9	44.1
117	Jhimpir Wind	0.0	0.0	15.5	38.1	27.2	32.9	37.9
118	Hawa Wind (HEPL)	0.0	0.0	14.5	38.2	26.3	32.1	38.7
119	TGT Wind	0.0	0.0	3.6	30.6	21.7	25.7	32.6
120	TGS ENERGY	0.0	0.0	0.0	30.0	21.2	24.8	31.7

Generation Statistics

Serial No.	Fiscal Year	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
121	TRICON BOSTON (A)	0.0	0.0	0.0	30.6	28.5	34.2	41.4
122	TRICON BOSTON (B)	0.0	0.0	0.0	24.4	26.8	32.9	40.5
123	TRICON BOSTON (C)	0.0	0.0	0.0	25.1	26.9	32.8	40.8
124	Master Green Wind	0.0	0.0	0.0	0.0	0.0	0.0	28.8
125	Tricom Wind	0.0	0.0	0.0	0.0	0.0	0.0	30.6
126	Tenaga Wind	0.0	14.4	20.8	25.3	28.6	23.8	30.0
127	Dawood Wind	0.0	7.9	22.5	26.5	27.6	23.2	30.0
128	Zephyr Wind	0.0	0.0	0.0	13.1	41.0	34.0	43.3
129	Indus Wind	0.0	0.0	0.0	0.0	0.0	0.0	19.6
130	Din Wind Energy	0.0	0.0	0.0	0.0	0.0	0.0	16.8
131	Liberty Wind-I	0.0	0.0	0.0	0.0	0.0	0.0	15.5
132	Gull Ahmed Wind-II	0.0	0.0	0.0	0.0	0.0	0.0	17.7
133	Metro Wind-II	0.0	0.0	0.0	0.0	0.0	0.0	9.1
134	Nasda Green Wind	0.0	0.0	0.0	0.0	0.0	0.0	13.6
135	Laked Side Wind	0.0	0.0	0.0	0.0	0.0	0.0	16.5
136	Liberty Wind-II	0.0	0.0	0.0	0.0	0.0	0.0	9.8

Table 1.8
Average Cost of WAPDA Hydro Power Plants (Rs /kWh)

Sr. No	Fiscal Year	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
WAPDA Hydel								
1	Tarbela	1.14	0.82	1.13	1.62	1.72	0.95	0.44
2	Tarbela Ext- IV				18.71	1.57	2.38	7.66
3	Mangla	0.62	0.71	1.12	1.57	1.72	1.51	2.21
4	Ghazi Brotha	1.07	1.39	1.46	2.17	1.51	2.30	3.89
5	Warsak	0.95	1.11	1.18	1.94	2.42	1.75	2.80
6	Chashma Hydel	2.00	2.42	2.42	3.33	3.60	4.86	8.74
7	Jinnah Hydel	7.91	3.74	3.20	7.46	7.12	9.95	12.97
8	Allai Khwar	2.88	2.00	2.52	5.06	1.95	7.11	8.10
9	Khan Khwar	3.52	21.67	2.81	5.22	2.45	8.81	9.98
10	Duber Khwar	1.51	1.50	1.22	2.24	2.10	6.71	5.65
12	Golen Gol				8.66	9.37	27.23	45.83
13	Rasul	1.56	1.64	1.24	3.72	7.59	3.00	5.48
14	Dargai	1.13	0.99	1.26	2.01	11.58	1.80	1.10
15	Nandipur	2.93	2.11	2.36	8.18	7.89	5.25	0.59
16	Shadiwal	2.88	2.38	2.80	5.55	16.24	4.91	2.84
17	Chichoki Mallian	2.26	2.49	3.01	4.07	6.47	5.17	3.16
18	Kurram Garhi	2.56	1.76	2.27	3.88	7.68	4.86	10.27
19	Renala	12.39	11.88	12.97	13.57	24.17	19.19	-6.09*
20	Chitral	10.85	10.69	9.42	12.26	21.29	16.51	-6.98*
21	Gomal Zam	6.28	44.33	40.58	N/A	8.57	21.25	10.42
22	Malakand/Jabban	5.98	4.37	3.46	6.20	2.45	6.97	12.07

*Per cost generation is in negative owing to Revenue Gap.

Table 1.9
Maximum Demand & Load Factor (NTDC)

Fiscal Year	Maximum Demand (MW)				Energy (GWh) Purchased by CPPA-G	Load Factor (%)
	Recorded	Computed Peak with Export to K Electric				
	With export to K-Electric	Total	NTDC	K Electric		
1996-97	8,505	8,772	8,552	220	49,564	66.53
1997-98	9,033	9,209	8,877	332	52,192	65.96
1998-99	9,074	9,351	9,191	160	52,752	66.36
1999-00	9,556	9,609	9,289	320	54,672	65.31
2000-01	10,033	10,128	9,628	500	57,282	65.18
2001-02	10,358	10,459	10,099	360	59,545	65.62
2002-03	11,000	11,044	10,484	560	62,694	65.06
2003-04	11,527	11,598	11,078	520	67,697	67.04
2004-05	12,385	12,595	12,035	560	71,670	66.06
2005-06	13,066	13,847	13,212	635	80,404	70.25
2006-07	13,645	15,838	15,138	700	85,987	71.94
2007-08	14,151	17,398	16,838	560	84,584	68.23
2008-09	14,055	17,852	17,325	527	82,702	67.17
2009-10	14,309	18,467	17,847	620	87,115	69.50
2010-11	14,468	18,521	17,901	620	89,775	70.83
2011-12	15,062	18,940	18,280	660	88,987	67.44
2012-13	14,756	18,827	18,227	600	87,080	67.37
2013-14	16,170	20,576	19,966	610	93,777	66.20
2014-15	16,233	21,701	21,031	670	96,463	67.84
2015-16	17,261	23,199	22,559	640	100,871	66.71
2016-17	19,020	25,717	25,117	600	106,796	64.10
2017-18	20,795	26,741	26,031	710	120,082	65.92
2018-19	21,736	26,267	25,627	640	122,302	64.23
2019-20	22,696	26,252	25,622	630	122,541	61.64
2020-21	23,792	28,253	27,193	1,060	130,060	62.40
2021-22	24,564	31,271	30,101	1,170	143,031	66.47

Transmission Statistics



2021-22

Length of 500 kV Transmission Lines	8,097 km
Length of 220 kV Transmission Lines	11,519 km
NTDC Substations/Switching Stations 500 kV	18
Other Substations 500 kV	2
Total Substations/Switching Stations 500 kV	20
NTDC Substations 220 kV	49
Other Substations 220 kV	3
Total Substations 220 kV	52
NTDC 500 kV Transformation Capacity (MVA)	25,500
Other 500 kV Power Plants Transformation Capacity (MVA)	2,550
Total 500 kV Transformation Capacity (MVA)	28,050
NTDC 220 kV Transformation Capacity (MVA)	35,360
Other 220 kV Power Plants Transformation Capacity (MVA)	977
Total 220 kV Power Plants Transformation Capacity (MVA)	36,377
NTDC Transmission Losses	2.83%

Table 2.1
Length of Transmission Lines (km) - Total

Year	Total Circuit Length (km)					
	500 kV	220 kV	132 kV	66 kV	33 kV	Total
1980-81	524	2,101	9,790	4,231		16,646
1981-82	834	2,106	10,237	4,426		17,603
1982-83	834	2,262	12,489	5,159		20,744
1983-84	1,239	2,262	14,071	5,285		22,857
1984-85	1,239	2,422	14,306	5,486		23,453
1985-86	1,545	2,432	15,284	6,108		25,369
1986-87	1,545	2,642	16,446	6,316		26,949
1987-88	1,545	2,840	16,803	6,466		27,654
1988-89	1,545	2,840	17,094	6,608		28,087
1989-90	1,863	2,922	17,494	6,728		29,007
1990-91	2,175	3,124	18,290	6,830		30,419
1991-92	2,175	3,150	18,676	6,839		30,840
1992-93	2,175	3,210	19,117	6,873		31,375
1993-94	2,623	3,504	19,662	7,047		32,836
1994-95	3,315	3,848	23,954	7,176		38,293
1995-96	3,902	4,422	24,325	7,214		39,863
1996-97	4,074	4,782	24,634	7,214		40,704
1997-98	4,079	5,340	24,709	7,262		41,390
1998-99	4,079	5,378	25,322	7,262		42,041
1999-00	4,094	5,498	25,661	7,291		42,544
2000-01	4,094	5,544	25,881	7,376		42,895
2001-02	4,094	5,544	26,068	7,376		43,082
2002-03	4,175	5,544	27,337	7,454		44,510
2003-04	4,473	5,822	27,731	7,551		45,577
2004-05	4,473	6,993	28,196	7,552		47,214
2005-06	4,582	6,993	29,240	7,617		48,432
2006-07	4,841	7,072	31,778	7,617		51,308
2007-08	4,877	7,072	22,497	8,271		42,717
2008-09	5,170	7,325	23,439	8,100		44,034
2009-10	5,170	7,367	23,995	8,053		44,585
2010-11	5,078	7,427	25,359	7,777	1,450	47,090
2011-12	5,078	7,948	25,646	7,822	1,450	47,943
2012-13	5,079	8,230	26,161	7,730	1,450	48,649
2013-14	5,079	8,547	23,028	6,770	2,254	45,678
2014-15	5,079	9,276	23,258	7,314	2,255	47,181
2015-16	5,113	9,276	24,032	7,199	2,255	47,875
2016-17	5,127	9,775	25,732	7,025	3,167	50,826
2017-18	5,756	10,562	26,847	6,182	2,362	51,709
2018-19	6,375	10,930	29,200	6,046	2,362	54,914
2019-20	7,414	11,120	29,327	6,046	2,362	56,269
2020-21	7,737	11,420	30,855	4,638	2,100	56,750
2021-22	8,097	11,519	31,271	4,339	2,100	57,325

Table 2.2
Length of Transmission Lines (km) - Punjab

Year	500 kV	220 kV	132 kV	66 kV	33 kV	Total
1980-81	524	1,406	6,975	3,269		12,174
1981-82	824	1,411	7,237	3,408		12,880
1982-83	824	1,431	9,134	3,986		15,375
1983-84	824	1,431	9,733	4,112		16,100
1984-85	824	1,431	9,956	4,131		16,342
1985-86	1,130	1,431	10,717	4,603		17,881
1986-87	1,130	1,641	11,637	4,699		19,107
1987-88	1,130	1,839	11,834	4,774		19,577
1988-89	1,130	1,839	11,940	4,794		19,703
1989-90	1,448	1,893	12,042	4,794		20,177
1990-91	1,750	2,095	12,376	4,896		21,117
1991-92	1,750	2,121	12,700	4,905		21,476
1992-93	1,750	2,181	12,840	4,939		21,710
1993-94	2,177	2,475	13,138	5,113		22,903
1994-95	2,702	2,817	17,119	5,190		27,828
1995-96	2,702	3,111	17,440	5,222		28,475
1996-97	2,702	3,471	17,665	5,222		29,060
1997-98	2,707	3,737	17,699	5,226		29,369
1998-99	2,707	3,737	17,961	5,226		29,631
1999-00	2,722	3,857	18,063	5,255		29,897
2000-01	2,722	3,903	18,195	5,256		30,076
2001-02	2,722	3,903	18,356	5,256		30,237
2002-03	2,803	3,903	18,845	5,256		30,807
2003-04	2,972	4,181	18,941	5,280		31,374
2004-05	2,972	4,813	19,065	5,280		32,130
2005-06	3,072	4,813	19,502	5,280		32,668
2006-07	3,331	4,800	21,357	5,280		34,768
2007-08	3,367	4,800	13,026	4,629		25,822
2008-09	3,660	5,047	13,078	4,631		26,416
2009-10	3,660	5,054	13,525	4,584		26,823
2010-11	3,660	5,054	13,829	4,313	153	27,009
2011-12	3,660	5,147	14,119	4,359	153	27,438
2012-13	3,660	5,450	14,483	4,260	153	28,006
2013-14	3,660	5,645	12,356	3,327	153	25,141
2014-15	3,660	5,782	12,408	3,871	153	25,874
2015-16	3,662	5,782	12,990	3,765	153	26,352
2016-17	3,677	5,958	13,585	3,698	69	26,987
2017-18	4,048	6,022	14,337	3,279	69	27,755
2018-19	4,170	6,094	14,530	3,216	69	28,079
2019-20	4,472	6,284	14,530	3,216	69	28,571
2020-21	4,612	6,239	15,509	2,265	44	28,669
2021-22	4,882	6,320	15,736	1,966	44	28,948

Table 2.3
Length of Transmission Lines (km) - Sindh

Year	500 kV	220 kV	132 kV	66 kV	33 kV	Total
1980-81		110	1,086	511		1,707
1981-82	10	110	1,086	531		1,737
1982-83	10	110	1,209	632		1,961
1983-84	415	110	1,275	632		2,432
1984-85	415	270	1,287	672		2,644
1985-86	415	280	1,293	822		2,810
1986-87	415	280	1,293	860		2,848
1987-88	415	280	1,293	935		2,923
1988-89	415	280	1,333	977		3,005
1989-90	415	308	1,573	1,022		3,318
1990-91	425	308	1,646	1,022		3,401
1991-92	425	308	1,646	1,022		3,401
1992-93	425	308	1,663	1,022		3,418
1993-94	425	308	1,663	1,022		3,418
1994-95	592	308	1,715	1,022		3,637
1995-96	1,062	308	1,739	1,022		4,131
1996-97	1,216	308	1,739	1,022		4,285
1997-98	1,216	482	1,744	1,066		4,508
1998-99	1,216	482	1,763	1,066		4,527
1999-00	1,216	482	1,779	1,066		4,543
2000-01	1,216	482	1,793	1,148		4,639
2001-02	1,216	482	1,799	1,148		4,645
2002-03	1,216	482	2,105	1,196		4,999
2003-04	1,216	482	2,198	1,222		5,119
2004-05	1,216	695	2,198	1,223		5,332
2005-06	1,216	695	2,400	1,288		5,599
2006-07	1,216	787	2,541	1,288		5,832
2007-08	1,216	787	3,508	1,802		7,312
2008-09	1,216	760	3,676	1,802		7,454
2009-10	1,216	795	3,736	1,802		7,549
2010-11	1,216	855	3,876	1,725		7,672
2011-12	1,216	915	3,761	1,702		7,594
2012-13	1,216	917	3,826	1,729		7,688
2013-14	1,216	977	3,967	1,728		7,889
2014-15	1,216	977	4,128	1,728		8,049
2015-16	1,248	977	4,175	1,708		8,108
2016-17	1,248	1,300	4,580	1,632		8,760
2017-18	1,414	1,300	4,633	1,420		8,767
2018-19	1,911	1,300	4,849	1,420		9,480
2019-20	2,648	1,300	4,849	1,420		10,217
2020-21	2,831	1,490	5,033	1,374		10,729
2021-22	2,921	1,508	5,086	1,374		10,889

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

Year	500 kV	220 kV	132 kV	66 kV	33 kV	Total
1980-81		423	1,223	297		1,943
1981-82		423	1,256	333		2,012
1982-83		559	1,339	387		2,285
1983-84		559	1,524	387		2,470
1984-85		559	1,524	529		2,612
1985-86		559	1,611	529		2,699
1986-87		559	1,839	603		3,001
1987-88		559	1,937	603		3,099
1988-89		559	2,009	683		3,251
1989-90		559	2,044	683		3,286
1990-91		559	2,225	683		3,467
1991-92		559	2,269	683		3,511
1992-93		559	2,393	683		3,635
1993-94	21	559	2,393	683		3,656
1994-95	21	561	2,652	723		3,957
1995-96	138	741	2,678	729		4,286
1996-97	138	741	2,678	729		4,286
1997-98	138	741	2,678	729		4,286
1998-99	138	741	2,799	729		4,407
1999-00	138	741	2,799	729		4,407
2000-01	138	741	2,805	731		4,415
2001-02	138	741	2,825	731		4,435
2002-03	138	741	2,829	731		4,439
2003-04	267	741	3,034	756		4,669
2004-05	267	741	3,350	756		4,984
2005-06	267	741	3,537	756		5,172
2006-07	267	741	3,677	756		5,312
2007-08	267	741	2,616	1,360		4,855
2008-09	267	750	2,692	1,187		4,804
2009-10	267	750	2,739	1,187		4,851
2010-11	267	750	3,142	1,259	312	5,729
2011-12	267	1,118	3,254	1,259	312	6,209
2012-13	267	1,095	3,340	1,239	312	6,253
2013-14	267	1,157	2,406	1,224	1,116	6,170
2014-15	267	1,157	2,423	1,224	1,117	6,188
2015-16	267	1,157	2,568	1,224	1,117	6,333
2016-17	267	1,157	2,604	1,223	1,117	6,368
2017-18	267	1,236	2,677	1,223	312	5,715
2018-19	267	1,532	4,401	1,150	312	7,662
2019-20	267	1,532	4,528	1,150	312	7,789
2020-21	267	1,704	4,813	892	75	7,751
2021-22	267	1,704	4,858	892	75	7,797

Table 2.5
Length of Transmission Lines (km) - Balochistan

Year	500 kV	220 kV	132 kV	66 kV	33 kV	Total
1980-81		162	506	154		822
1981-82		162	658	154		974
1982-83		162	807	154		1,123
1983-84		162	1,539	154		1,855
1984-85		162	1,539	154		1,855
1985-86		162	1,663	154		1,979
1986-87		162	1,677	154		1,993
1987-88		162	1,739	154		2,055
1988-89		162	1,812	154		2,128
1989-90		162	1,835	229		2,226
1990-91		162	2,043	229		2,434
1991-92		162	2,061	229		2,452
1992-93		162	2,221	229		2,612
1993-94		162	2,468	229		2,859
1994-95		162	2,468	241		2,871
1995-96		262	2,468	241		2,971
1996-97	18	262	2,552	241		3,073
1997-98	18	380	2,588	241		3,227
1998-99	18	418	2,799	241		3,476
1999-00	18	418	3,020	241		3,697
2000-01	18	418	3,088	241		3,765
2001-02	18	418	3,088	241		3,765
2002-03	18	418	3,558	271		4,265
2003-04	18	418	3,558	293		4,287
2004-05	18	744	3,583	293		4,638
2005-06	27	744	3,801	293		4,865
2006-07	27	744	4,203	293		5,267
2007-08	27	744	3,347	480		4,598
2008-09	27	768	3,993	480		5,268
2009-10	27	768	3,995	480		5,270
2010-11	27	768	4,512	480	985	6,772
2011-12	27	768	4,512	502	985	6,794
2012-13	27	768	4,512	502	985	6,794
2013-14	27	768	4,299	491	985	6,570
2014-15	27	1,360	4,299	491	985	7,162
2015-16	27	1,360	4,299	502	985	7,173
2016-17	27	1,360	4,963	472	1,981	8,803
2017-18	27	2,004	5,200	260	1,981	9,472
2018-19	27	2,004	5,420	260	1,981	9,693
2019-20	27	2,004	5,420	260	1,981	9,692
2020-21	27	1,987	5,500	106	1,981	9,601
2021-22	27	1,987	5,590	106	1,981	9,691

Table 2.6
Voltage-wise Grid Stations & MVA Capacity – Total

Year	500 kV		220 kV		132 kV		66 kV		33 kV		Total	
	Grid Stations	Capacity (MVA)	Grid Stations	Capacity (MVA)	Grid Stations	Capacity (MVA)	Grid Stations	Capacity (MVA)	Grid Stations	Capacity (MVA)	Grid Stations	Capacity (MVA)
1981-82	1	900	7	1,983	184	5,650					192	8,533
1982-83	1	900	10	2,523	203	6,308					214	9,731
1983-84	2	1,350	10	3,106	219	6,777					231	11,233
1984-85	2	1,350	10	3,106	240	7,379					252	11,835
1985-86	2	1,350	11	3,106	261	8,197					274	12,653
1986-87	4	3,600	12	3,851	276	8,980					292	16,431
1987-88	4	3,600	13	4,296	283	9,409					300	17,305
1988-89	6	4,974	14	4,282	296	9,755					316	19,011
1989-90	6	4,974	14	4,402	309	10,725					329	20,101
1990-91	6	4,974	14	4,982	326	11,572					346	21,528
1991-92	6	4,974	15	5,462	334	12,776					355	23,212
1992-93	7	6,774	16	5,942	342	13,067					365	25,783
1993-94	7	6,774	18	6,210	352	13,655					377	26,639
1994-95	7	6,774	18	6,210	363	14,064					388	27,048
1995-96	7	6,774	21	6,850	374	15,312	190	2,375			592	31,311
1996-97	8	7,674	20	6,530	381	15,810	188	2,331			597	32,345
1997-98	8	7,674	20	6,863	387	16,364	185	2,322			600	33,223
1998-99	8	7,674	20	7,343	392	16,745	185	2,401			605	34,163
1999-00	9	8,274	24	8,636	401	17,349	185	2,414			619	36,673
2000-01	9	8,274	24	8,996	410	17,911	186	2,428			629	37,609
2001-02	9	8,274	24	8,996	421	18,082	187	2,491			641	37,843
2002-03	9	8,274	24	8,996	433	18,330	190	2,523			656	38,123
2003-04	9	8,274	26	9,528	440	18,473	194	2,549			669	38,824
2004-05	9	8,274	27	9,688	456	18,726	195	2,562			687	39,250
2005-06	9	9,150	27	11,802	464	19,274	186	2,629			686	42,855
2006-07	11	12,000	27	13,562	470	19,430	185	2,618	2	8	695	47,618
2007-08	11	12,000	26	13,659	484	22,202	183	2,631	2	8	706	50,500
2008-09	12	13,800	26	14,829	490	24,688	169	2,665	6	32	703	56,013
2009-10	12	14,850	26	15,014	501	26,257	161	2,553	6	72	706	58,745
2010-11	12	14,850	27	16,494	519	29,773	161	2,723	7	48	726	63,887
2011-12	12	14,850	29	17,884	547	30,559	154	2,487	7	52	749	65,831
2012-13	12	15,300	29	18,070	557	31,239	148	2,471	7	52	753	67,132
2013-14	12	15,750	31	19,174	586	33,818	131	2,335	7	52	767	71,128
2014-15	13	16,950	33	22,854	591	35,551	134	2,361	7	52	782	77,767
2015-16	14	18,150	37	24,040	624	38,940	136	2,474	8	60	818	83,664
2016-17	14	18,150	39	25,610	650	42,116	111	2,071	40	215	853	88,162
2017-18	16	20,850	42	29,110	689	46,828	86	1,674	40	222	873	98,685
2018-19	16	22,950	45	31,060	806	51,417	80	1,545	40	222	987	107,194
2019-20	16	24,000	45	31,900	809	51,496	80	1,545	39	222	989	109,163
2020-21	16	24,000	45	32,220	853	55,667	69	1,329	36	213	1,019	113,429
2021-22	17	25,500	49	35,360	877	58,195	67	1,309	36	208	1,047	120,572

Table 2.7
Voltage-wise Grid Stations & MVA Capacity- Punjab

Year	500 kV		220 kV		132KV		66kV		33kV		Total	
	Grid Stations	Capacity (MVA)	Grid Stations	Capacity (MVA)	Grid Stations	Capacity (MVA)	Grid Stations	Capacity (MVA)	Grid Stations	Capacity (MVA)	Grid Stations	Capacity (MVA)
1981-82	1	900	6	1,823	112	4,075					119	6,798
1982-83	1	900	8	2,043	125	4,595					134	7,538
1983-84	1	900	7	2,466	136	4,864					144	8,230
1984-85	1	900	7	2,466	148	5,211					156	8,577
1985-86	1	900	8	2,466	167	5,686					176	9,052
1986-87	2	2,250	9	3,211	168	6,575					179	12,036
1987-88	2	2,250	10	3,656	170	6,913					182	12,819
1988-89	2	2,250	11	3,642	177	7,200					190	13,092
1989-90	2	2,250	11	3,602	183	7,794					196	13,646
1990-91	2	2,250	11	4,182	197	8,504					210	14,936
1991-92	2	2,250	12	4,662	203	9,407					217	16,319
1992-93	3	4,050	12	4,662	207	9,608					222	18,320
1993-94	3	4,050	14	4,930	212	10,083					229	19,063
1994-95	3	4,050	14	4,930	217	10,394					234	19,374
1995-96	3	4,050	17	5,410	231	11,238	113	1,472			364	22,170
1996-97	4	4,950	16	5,090	234	11,536	111	1,450			365	23,026
1997-98	4	4,950	16	5,250	238	11,953	110	1,410			368	23,563
1998-99	4	4,950	16	5,570	241	12,109	108	1,431			369	24,060
1999-00	5	5,550	19	6,543	246	12,415	108	1,431			378	25,939
2000-01	5	5,550	19	6,903	250	12,626	108	1,431			382	26,510
2001-02	5	5,550	19	6,903	258	12,758	109	1,494			391	26,705
2002-03	5	5,550	19	6,903	265	12,914	109	1,494			398	26,861
2003-04	5	5,550	21	7,435	269	12,992	109	1,494			404	27,471
2004-05	5	5,550	22	7,595	278	13,161	109	1,494			414	27,800
2005-06	5	5,550	19	8,442	278	13,161	98	1,486			400	28,639
2006-07	6	7,200	19	9,242	280	13,187	97	1,473			402	31,102
2007-08	6	7,200	18	9,499	286	15,273	94	1,451			404	33,423
2008-09	7	9,000	18	10,669	296	17,182	92	1,490	1	10	414	38,352
2009-10	7	10,050	18	10,694	304	18,367	83	1,407	1	10	413	40,527
2010-11	7	10,050	18	12,014	311	21,153	82	1,522	2	22	420	44,761
2011-12	7	10,050	19	12,584	339	21,784	79	1,421	2	22	446	45,861
2012-13	7	10,050	19	12,610	339	21,784	74	1,364	2	22	441	45,830
2013-14	7	10,050	21	13,214	361	23,426	59	1,216	2	22	450	47,927
2014-15	8	11,250	25	16,074	366	24,620	65	1,275	2	22	466	53,240
2015-16	8	11,250	25	16,740	386	27,019	66	1,325	2	26	487	56,360
2016-17	8	11,250	27	18,220	400	29,238	51	1,074	3	33	489	59,815
2017-18	10	13,950	28	19,880	427	32,470	32	770	2	24	499	67,094
2018-19	10	16,050	28	20,060	532	36,558	30	667	2	24	602	73,359
2019-20	10	16,650	28	20,900	532	36,586	30	667	2	24	602	74,827
2020-21	10	16,650	28	21,220	567	39,593	22	438	2	24	629	77,925
2021-22	11	18,150	30	23,200	582	41,110	24	465	2	25	649	82,950

Table 2.8
Voltage-wise Grid Stations & MVA Capacity - Sindh

Year	500 kV		220 kV		132 kV		66 kV		33 kV		Total	
	Grid Stations	Capacity (MVA)	Grid Stations	Capacity (MVA)	Grid Stations	Capacity (MVA)	Grid Stations	Capacity (MVA)	Grid Stations	Capacity (MVA)	Grid Stations	Capacity (MVA)
1981-82					40	786					40	786
1982-83					43	851					43	851
1983-84	1	450	1	160	47	1,013					49	1,623
1984-85	1	450	1	160	48	1,092					50	1,702
1985-86	1	450	1	160	48	1,254					50	1,864
1986-87	2	1,350	1	160	54	1,193					57	2,703
1987-88	2	1,350	1	160	56	1,219					59	2,729
1988-89	3	2,250	1	160	58	1,229					62	3,639
1989-90	3	2,250	1	160	61	1,265					65	3,675
1990-91	3	2,250	1	160	63	1,285					67	3,695
1991-92	3	2,250	1	160	65	1,357					69	3,767
1992-93	3	2,250	1	160	66	1,389					70	3,799
1993-94	3	2,250	1	160	69	1,457					73	3,867
1994-95	3	2,250	1	160	71	1,491					75	3,901
1995-96	3	2,250	1	320	64	1,606	35	342			103	4,518
1996-97	3	2,250	1	320	66	1,690	36	348			106	4,608
1997-98	3	2,250	1	320	66	1,690	36	361			106	4,621
1998-99	3	2,250	1	320	66	1,690	37	390			107	4,650
1999-00	3	2,250	2	640	67	1,716	37	390			109	4,996
2000-01	3	2,250	2	640	68	1,762	38	398			111	5,050
2001-02	3	2,250	2	640	68	1,762	38	398			111	5,050
2002-03	3	2,250	2	640	71	1,828	38	398			114	5,116
2003-04	3	2,250	2	640	72	1,841	39	404			116	5,135
2004-05	3	2,250	2	640	73	1,854	40	417			118	5,161
2005-06	3	2,700	3	1,440	79	2,248	38	407			123	6,795
2006-07	4	3,900	3	1,600	80	2,261	39	415			126	8,176
2007-08	4	3,900	3	1,600	82	2,600	37	418			126	8,518
2008-09	4	3,900	3	1,600	83	2,763	36	444			126	8,707
2009-10	4	3,900	3	1,760	84	2,920	36	433			127	9,013
2010-11	4	3,900	4	1,920	90	3,208	37	477			135	9,505
2011-12	4	3,900	5	2,490	90	3,208	35	429			134	10,027
2012-13	4	3,900	5	2,490	93	3,338	37	487			139	10,215
2013-14	4	4,350	5	2,900	97	3,550	37	493			143	11,293
2014-15	4	4,350	5	2,900	98	3,771	34	454			141	11,475
2015-16	5	5,550	5	2,990	106	3,977	34	462			149	12,979
2016-17	5	5,550	5	2,990	108	4,349	26	358			143	13,247
2017-18	5	5,550	5	3,920	111	4,971	24	323			145	14,764
2018-19	5	5,550	5	4,010	116	5,145	24	348	0	6	150	15,059
2019-20	5	6,000	5	4,010	116	5,145	24	348	0	6	150	15,509
2020-21	5	6,000	5	4,010	119	5,516	24	365	0	6	153	15,897
2021-22	5	6,000	7	5,170	122	5,671	23	365	0	0	158	17,206

Table 2.9
Voltage-wise Grid Stations & MVA Capacity - Khyber Pakhtunkhwa

Year	500 kV		220 kV		132 kV		66 kV		33 kV		Total	
	Grid Stations	Capacity (MVA)	Grid Stations	Capacity (MVA)	Grid Stations	Capacity (MVA)	Grid Stations	Capacity (MVA)	Grid Stations	Capacity (MVA)	Grid Stations	Capacity (MVA)
1981-82					23	638					23	638
1982-83			1	320	25	659					26	979
1983-84			1	320	23	633					24	953
1984-85			1	320	27	751					28	1,071
1985-86			1	320	27	874					28	1,194
1986-87			1	320	30	797					31	1,117
1987-88			1	320	30	797					31	1,117
1988-89	1	474	1	320	33	836					35	1,630
1989-90	1	474	1	320	36	1,162					38	1,956
1990-91	1	474	1	320	37	1,279					39	2,073
1991-92	1	474	1	320	37	1,463					39	2,257
1992-93	1	474	2	800	37	1,503					40	2,777
1993-94	1	474	2	800	39	1,542					42	2,816
1994-95	1	474	2	800	42	1,600					45	2,874
1995-96	1	474	1	480	48	1,828	33	451			83	3,233
1996-97	1	474	1	480	49	1,906	32	423			83	3,283
1997-98	1	474	1	653	49	2,010	32	468			83	3,605
1998-99	1	474	1	653	49	2,114	32	474			83	3,715
1999-00	1	474	1	653	49	2,249	32	487			83	3,863
2000-01	1	474	1	653	50	2,470	32	487			84	4,084
2001-02	1	474	1	653	52	2,496	32	487			86	4,110
2002-03	1	474	1	653	53	2,509	34	506			89	4,142
2003-04	1	474	1	653	55	2,561	35	513			92	4,201
2004-05	1	474	1	653	60	2,626	35	513			97	4,266
2005-06	1	900	3	1,120	63	2,800	39	575			106	5,395
2006-07	1	900	3	1,920	64	2,878	38	569			106	6,267
2007-08	1	900	3	1,760	70	3,225	40	604			114	6,489
2008-09	1	900	3	1,760	65	3,150	30	548	3	14	102	6,372
2009-10	1	900	3	1,760	65	3,294	31	543	3	54	103	6,551
2010-11	1	900	3	1,760	66	3,516	31	544	3	18	104	6,737
2011-12	1	900	3	2,010	66	3,516	30	476	3	22	103	6,923
2012-13	1	1,350	3	2,170	70	3,900	27	471	3	22	104	7,913
2013-14	1	1,350	3	2,260	72	4,462	25	465	3	22	104	8,559
2014-15	1	1,350	3	2,260	70	4,700	25	471	3	22	102	8,802
2015-16	1	1,350	3	2,690	72	5,251	26	499	4	26	106	9,815
2016-17	1	1,350	3	2,780	77	5,899	25	517	7	38	113	10,583
2017-18	1	1,350	4	3,370	82	6,296	25	504	6	38	118	11,558
2018-19	1	1,350	7	4,960	86	6,531	23	497	6	32	123	13,370
2019-20	1	1,350	7	4,960	89	6,582	23	497	5	32	125	13,421
2020-21	1	1,350	7	4,960	94	7,291	20	487	2	23	124	14,111
2021-22	1	1,350	7	4,960	97	7,961	17	441	2	23	124	14,735

Table 2.10
Voltage-wise Grid Stations & MVA Capacity - Baluchistan

Year	500 kV		220 kV		132 kV		66 kV		33 kV		Total	
	Grid Stations	Capacity (MVA)	Grid Stations	Capacity (MVA)	Grid Stations	Capacity (MVA)	Grid Stations	Capacity (MVA)	Grid Stations	Capacity (MVA)	Grid Stations	Capacity (MVA)
1981-82			1	160	9	151					10	311
1982-83			1	160	10	203					11	363
1983-84			1	160	13	267					14	427
1984-85			1	160	17	325					18	485
1985-86			1	160	19	383					20	543
1986-87			1	160	24	415					25	575
1987-88			1	160	27	480					28	640
1988-89			1	160	28	490					29	650
1989-90			1	320	29	504					30	824
1990-91			1	320	29	504					30	824
1991-92			1	320	29	549					30	869
1992-93			1	320	32	567					33	887
1993-94			1	320	32	573					33	893
1994-95			1	320	33	579					34	899
1995-96			2	640	31	640	9	110			42	1,390
1996-97			2	640	32	678	9	110			43	1,428
1997-98			2	640	34	711	7	83			43	1,434
1998-99			2	800	36	832	8	106			46	1,738
1999-00			2	800	39	969	8	106			49	1,875
2000-01			2	800	42	1,053	8	112			52	1,965
2001-02			2	800	43	1,066	8	112			53	1,978
2002-03			2	800	44	1,079	9	125			55	2,004
2003-04			2	800	44	1,079	11	138			57	2,017
2004-05			2	800	45	1,085	11	138			58	2,023
2005-06			2	800	44	1,065	11	161			57	2,026
2006-07			2	800	46	1,104	11	161	2	8	61	2,073
2007-08			2	800	46	1,104	12	157	2	8	62	2,070
2008-09			2	800	46	1,593	11	183	2	8	61	2,583
2009-10			2	800	48	1,677	11	169	2	8	63	2,654
2010-11			2	800	52	1,896	11	181	2	8	67	2,884
2011-12			2	800	52	2,051	10	161	2	8	66	3,020
2012-13			2	800	55	2,218	10	149	2	8	69	3,174
2013-14			2	800	56	2,380	10	162	2	8	70	3,350
2014-15			4	1,620	57	2,460	10	162	2	8	73	4,250
2015-16			4	1,620	60	2,694	10	188	2	8	76	4,509
2016-17			4	1,620	65	2,631	9	122	30	144	108	4,517
2017-18			5	1,940	69	3,092	5	78	32	160	111	5,270
2018-19			5	2,030	72	3,183	3	33	32	160	112	5,406
2019-20			5	2,030	72	3,183	3	33	32	160	112	5,406
2020-21			5	2,030	73	3,267	3	39	32	160	113	5,496
2021-22			5	2,030	76	3,453	3	39	32	160	116	5,682

Table 2.11
NTDC Substations/Switching Stations - 500 kV

Sr. No.	Name	DISCO	Province	T/Fs	Capacity (MVA)	T/Fs	Capacity (MVA)	Total Capacity (MVA)
A- Substations								
Lahore Region								
1	Gatti	FESCO	Punjab			4	450	1,800
2	Sheikhupura	LESCO	Punjab	4	600			2,400
3	Yousafwala	MEPCO	Punjab	3	600			1,800
4	Lahore South	LESCO	Punjab	3	750			2,250
5	Nokhar	GEPCO	Punjab	3	600			1,800
6	Faisalabad West	FESCO	Punjab	2	750			1,500
Islamabad Region								
7	Rawat	IESCO	Punjab	1	750	3	450	2,100
8	Sheikh Muhammadi	PESCO	KPK			3	450	1,350
Multan Region								
9	Multan	MEPCO	Punjab			2	450	900
10	TPS Muzaffargarh	MEPCO	Punjab	2	600			1,200
11	D.G. Khan	MEPCO	Punjab	2	600			1,200
12	R.Y. Khan	MEPCO	Punjab	2	600			1,200
Hyderabad Region								
13	Jamshoro	HESCO	Sindh			3	450	1,350
14	Dadu	HESCO	Sindh			2	450	900
15	Guddu	SEPCO	Sindh			3	450	1,350
16	Shikarpur	SEPCO	Sindh	2	600			1,200
17	NKI	K-Electric	Sindh	2	600			1,200
NTDC Total								25,500
Other Power Stations								
18	Ghazi Brotha HPP	PESCO	K.P. K	2	600			1,200
19	Tarbela HPP	PESCO	K.P. K	3	450			1,350
Total								2,550
Grand Total								28,050
B- Switching Stations								
Hyderabad region								
1	Moro (Switching Station)	SEPCO	Sindh					

Table 2.12
NTDC Grid Stations - 220 kV

Sr. No.	Name	DISCO	T/Fs	Capacity (MVA)	T/Fs	Capacity (MVA)	Total T/Fs	Total Capacity (MVA)
Lahore Region								
1	Bund Road	LESCO	4	250			4	1,000
2	Bandala	FESCO	1	250	2	160	3	570
3	Ghakkar	GEPCO			4	160	4	640
4	Ghazi Road	LESCO	3	250			3	750
5	Gujrat	GEPCO	3	250			3	750
6	Jaranwala Road	FESCO			4	160	4	640
7	Kala Shah Kaku	LESCO			4	160	4	640
8	Kassowal	MEPCO	1	250	2	160	3	570
9	Lalian	FESCO	1	250			1	250
10	Ludewala	FESCO	2	250	1	160	3	660
11	New Kot Lakhpat	LESCO	3	250			3	750
12	Nishatabad	FESCO			5	160	5	800
13	Okara	LESCO	2	250			2	500
14	Ravi	LESCO	3	250			3	750
15	Samundari Road	FESCO	1	250	2	160	3	570
16	Sarfaraz Nagar	LESCO			4	160	4	640
17	Sialkot	GEPCO			3	160	3	480
18	Shalamar	LESCO			3	160	3	480
19	T.T Singh	FESCO	3	250	1	160	4	910
20	WAPDA Town	LESCO	1	250	2	160	3	570
Total Lahore							62	12,920
Islamabad Region								
1	Bannu	PESCO	1	250	2	160	3	570
2	Burhan	IESCO	4	250			4	1,000
3	Daudkhel	FESCO			2	160	2	320
4	Islamabad Univ	IESCO	2	250			2	500
5	Mardan	PESCO	3	250			3	750
6	Sangjani (ISPR)	IESCO			5	160	5	800
7	Shahi Bagh	PESCO			4	160	4	640
8	New Mansehra	PESCO	2	250			2	500
9	Chakdara	PESCO	2	250			2	500
10	D.I. Khan	PESCO	2	250			2	500
11	Nowshera	PESCO	2	250			2	500
Total Islamabad							31	6,580
Hyderabad Region								
1	Daharki	SEPCO	1	250	1	160	2	410
2	Guddu (Switchyard)	SEPCO			1	160	1	160
3	Hala Road	HESCO	1	250	2	160	3	570

Transmission Statistics

Sr. No.	Name	DISCO	T/Fs	Capacity (MVA)	T/Fs	Capacity (MVA)	Total T/Fs	Total Capacity (MVA)
4	Jhampir-I	HESCO	3	250			3	750
5	Jhampir-II	HESCO	3	250			3	750
6	Rohri	SEPCO	2	250			2	500
7	T.M. Khan	HESCO			2	160	2	320
Total Hyderabad							17	3,710
Quetta Region								
1	D.M. Jamali	QESCO			2	160	2	320
2	Khuzdar	QESCO			2	160	2	320
3	Loralai	QESCO	2	250			2	500
4	Quetta	QESCO	1	250	2	160	3	570
5	Sibbi	QESCO			2	160	2	320
Total Quetta							11	2,030
Multan Region								
1	Muzaffargarh	MEPCO			3	160	3	480
2	Bahawalpur	MEPCO	2	250	1	160	3	660
3	Vehari	MEPCO	1	250	2	160	3	570
4	Chishtian	MEPCO			3	160	3	480
5	Lal Sohanra	MEPCO	1	250			1	250
6	NGPS Multan	MEPCO			3	160	3	480
Total Multan							16	2,920
In Service Substations (500 kV)								
Islamabad								
1	Rawat	IESCO	4	250			4	1,000
2	Sheikh Muhammadi	PESCO	4	250			4	1,000
Total Islamabad							8	2,000
Lahore Region								
1	Faisalabad West	FESCO	2	250			2	500
2	Sheikhupura	LESCO			4	160	4	640
3	Yousafwala	MEPCO			4	160	4	640
4	Nokhar	GEPCO			3	160	3	480
Total Lahore							13	2,260
Multan Region								
1	Multan	MEPCO			3	160	3	480
2	D.G. Khan	MEPCO	2	250			2	500
3	R.Y. Khan	MEPCO	2	250			2	500
Total Multan							7	1,480
Hyderabad Region								
1	Shikarpur	SEPCO	1	250	2	160	3	570
2	Dadu	HESCO	1	250	2	160	3	570
3	Jamshoro	SEPCO			2	160	2	320
Total Hyderabad							8	1,460

Transmission Statistics

Sr. No.	Name	DISCO	T/Fs	Capacity (MVA)	T/Fs	Capacity (MVA)	Total T/Fs	Total Capacity (MVA)	
NTDC Total							176	35,360	
	Other Power Plants								
1	KAPCO PP	MEPCO	3	100	1	200	4	500	
2	Mangla HPP	IESCO	3	138			3	414	
3	Bahria Town	IESCO	1	63			1	63	
Total Power Plants							977		
Grand Total (NTDC+Others)								36,377	

Table 2.13
Length of 500 kV Transmission Lines (km)

Sr. No.	Region Name	COD	S/C	D/C	Total Circuits Length (km)
	Lahore Region				
1	Tarbela Hydro Power Plant (HPP) – Gatti I	1978	330		330
2	Tarbela HPP – Gatti II	Jul-1985	327		327
3	In/out of Tarbela HPP – Gatti I at Ghazi Brotha HPP Tarbela HPP – Ghazi Brotha HPP I (73 km) Ghazi Brotha HPP – Gatti I (309 km)	Apr-2003		26	52
4	In/out of Tarbela HPP – Gatti II at Ghazi Brotha HPP Tarbela HPP – Ghazi Brotha HPP II (77 km) Ghazi Brotha HPP – Gatti II (308 km)	Nov-2003		29	58
5	Gatti – Lahore (Sheikhupura)	Oct-1993	94		94
6	In/out of Lahore – Gatti at Bhikki Power Plant (PP) Gatii – Bhikki PP (83 km) Bhikki PP– Lahore (16 km)	Oct-2016		2.5	5
7	Gatti – Multan	Jun-1995	222		222
8	In/out of Gatti- Multan at H.B. Shah PP Gatti – H.B. Shah PP II (166 km) H.B. Shah PP – Multan (162 km)	Aug-2018		53	106
9	TPS Muzafargarh – Gatti	Nov-2008	281		281
10	In/out of TPS Muzafargarh – Gatti at H.B. Shah PP TPS Muzafargarh – H.B. Shah PP (174 km) Gatti – H.B. Shah PP I (111 km)	Mar-2017		2	4
11	In/out of Gatti – H.B. Shah PP I at Faisalabad West Faisalabad West – Gatti (42 km) H.B. Shah PP – Faisalabad West (72 km)	Feb-2021		1.5	3
12	In/out of Gatti – H.B. Shah PP II at Faisalabad West Faisalabad West – Gatti (87 km) H.B. Shah PP – Faisalabad West (155 km)	May-2020		38	76
13	Gatti – Multan	Feb-1981	209		209
14	In/out of Gatti – Multan at Rousch PP Rousch PP – Gatti (150 km) Rousch PP– Multan (62 km)	Feb-1998		1.5	3
15	Multan – Yousafwala	May-1992	161		161
16	Yousafwala – Lahore	Jun-1992	159		159
17	In/Out of Yousafwala – Lahore at Sahiwal CFPP Yousafwala – Sahiwal CFPP (12 km) Sahiwal CFPP – Lahore (149 km)	Jan-2017		1	2
18	In/out of Sahiwal CFPP – Lahore at Lahore South Lahore – Lahore South I (66 km) Sahiwal CFPP – Lahore South (98 km)	Apr-2019		7.5	15
19	Nokhar – Lahore I	Oct-2009	56.4		56.4
20	Nokhar – Lahore II	Oct-2009	64		64.0
21	In/out of Lahore – Nokhar II at Lahore South Lahore – Lahore South II (62 km) Nokhar – Lahore South (110 km)	Jul-2018		54	108
22	Balloki PP – Lahore South I	Oct-2018	31		31
23	Balloki PP – Lahore South II	Oct-2018	31		31

Transmission Statistics

Sr. No.	Region Name	COD	S/C	D/C	Total Circuits Length (km)
24	In/out of Lahore – Lahore South I at HVDC C/S Lahore – HVDC C/S I (48 km) HVDC C/S – Lahore South I (26 km)	Apr-2019		4	8
25	In/out of Lahore – Lahore South II at HVDC C/S Lahore – HVDC C/S II (55 km) HVDC C/S – Lahore South II (18 km)	Oct-2020		6	11
	Total Lahore		1,965	226	2,416
	Islamabad Region				
1	Tarbela HPP – Sheikh Muhammadi (Peshawar)	Dec-1995	117		117.0
2	Tarbela HPP – Rawat	Feb-1997	110.9		110.9
3	Ghazi Brotha HPP – Rawat I	Nov-2005	107.4		107.4
4	Ghazi Brotha HPP – Rawat II	Jul-2004	108.4		108.4
5	Rawat – Nokhar I	Oct-2009	180.4		180.4
6	Rawat – Nokhar II	Oct-2009	192.8		192.8
7	In/out of Rawat – Nokhar II at Neelum Jhelum HPP Rawat – Neelum Jhelum HPP (214.3 km) Neelum Jhelum HPP – Nokhar I (284.7 km)	Apr-2018		153	306
8	In/out of Neelum Jehlum HPP – Rawat at Nokhar Neelum Jhelum HPP – Nokhar II (284.7 km) Rawat – Nokhar II (192.8 km)	Jan-2022		131.7	263.4
9	In/out of Neelum Jehlam – Nokhar I at Karot HPP Neelum Jhelum HPP – Karot HPP (77.2 km) Nokhar – Karot HPP (214.5 km)	Jan-2022		3.50	7.00
	Total Islamabad Region		817	288	1,393
	Hyderabad Region				
1	Dadu – Jamshoro I	Jul-1987	152		152
2	Dadu – Jamshoro II	Oct-1994	153		153
3	Jamshoro – Moro	Mar-2019	202		202
4	In/out of Jamshoro – Moro at Matiari Jamshoro – Matiari I (52 km) Moro – Matiari (156 km)	Jul-2018		3	6
5	In/out of Dadu – Jamshoro I at Matiari Dadu – Matiari (158 km) Matiari – Jamshoro II (51 km)	Apr-2021		28.5	57
6	Dadu – Moro	Nov-2018	57		57
7	Port Qasim CFPP – Matiari I	Apr-2021	173		173
8	Port Qasim CFPP – Matiari II	Apr-2021	173		173
9	In/out of Port Qasim CFPP – Matiari at Lucky Port Qasim – Lucky (158 km) Lucky – Matiari (51 km)	Nov-2021		18	36
10	Thar Engro CFPP – Matiari I	Jul-2018	247		247
11	Thar Engro CFPP – Matiari II	Jul-2018	247		247
12	In/out of Thar – Matiari at TEL Thar– TEL (1.5 km) TEL – Matiari (245 km)	Dec-2021		1	2
13	Hub PP – Jamshoro I	Dec-1995	182		182
14	Hub PP – Jamshoro II	Oct-1996	181		181
15	In/out of Hub PP – Jamshoro I at NKI Hub PP – NKI (22 km) NKI – Jamshoro (161 km)	Apr- 2006		0.5	1

Transmission Statistics

Sr. No.	Region Name	COD	S/C	D/C	Total Circuits Length (km)
16	China HUBCO CFPP – Jamshoro I	Feb-2021	182		182
17	China HUBCO CFPP – Jamshoro II	Feb-2021	182		182
18	In/out of Hub PP – NKI at K2/K3 PP (Tapping of Hub PP – K2/K3 PP line at China HUBCO CFPP – Jamshoro I line) K2/K3 PP – Jamshoro I (195 km) K2/K3 PP – NKI (28 km) China HUBCO CFPP – Hub PP (6 km)	Feb-2021		12.5	25
19	In/out of Hub PP – Jamshoro II at K2/K3 K2/K3– Hub PP (37.6 km) K2/K3 – Jamshoro II (195 km)	Apr-2021		26	52
20	Guddu – Dadu I	Feb-1987	286		286
21	Guddu – Dadu II	Aug-1995	289		289
22	In/out of Guddu – Dadu I at Shikarpur Guddu – Shikarpur I (123 km) Shikarpur – Dadu I (196 km)	May-2016		16.5	33
23	In/out of Guddu – Dadu II at Shikarpur Guddu – Shikarpur II (124 km) Shikarpur – Dadu II (195 km)	Mar-2018		15	30
Total Hyderabad			2,706	121	2,948
Multan Region					
1	Multan – Guddu I	Dec-1986	310		310
2	Multan – Guddu II	Jan-1997	312		312
3	Multan – Guddu III	May-1997	313		313
4	In/out of Multan – Guddu I at TPS Muzaffargarh Multan – TPS Muzaffargarh (63.6 km) TPS Muzaffargarh – Guddu (257.4 km)	Mar-2000		5.5	11
5	In/out of Multan – Guddu II at Guddu 747 PP Multan – Guddu 747 PP (313.5 km) Guddu – Guddu 747 PP (2.5 km)	Feb-2014		2	4
6	In/out of Multan – Guddu 747 PP at R.Y. Khan Multan – R.Y. Khan (264 km) Guddu 747 PP – R.Y. Khan (110 km)	Feb-2018		30.5	61
7	In/out of Multan – Guddu III at D.G. Khan Multan – D.G. Khan (139 km) D.G. Khan – Guddu (227 km)	Aug-2014		26.5	53
8	In/out of Multan – D.G. Khan at TPS Muzaffargarh Multan – TPS Muzaffargarh II (70 km) TPS Muzaffargarh – D.G. Khan (84 km)	Mar-2020		7.5	15
9	TPS Muzaffargarh – Guddu 747 PP	Mar-2020	255.6	2.2	260
Total Multan			1,191	74	1,339
Grand Total			6,679	709	8,097

Table 2.14
Length of 220 kV Transmission Lines (km)

Sr. No.	Region Name	COD	S/C	D/C	Total Circuits Length (km)
	Lahore Region				
1	Gatti – K.S. Kaku I & II	1979		125	250
2	In/out of Gatti – K.S. Kaku I & II at Bandala Gatti – Bandala I & II (63.58 km) K.S. Kaku – Bandala I & II (212 km)	Jun-2014		13	26
3	Gatti – Nishatabad I & II	Jul-1979		2	4
4	Gatti – Jaranwala Road I & II	Oct-1991		16	32
5	Gatti – Yousafwala I & II	Jul-1987		96	192
6	Gatti – Ludewala I & II	May-2005		99.00	198.00
7	In/out of Gatti – Ludewala I & II at Lalian Gatti – Lalaian I & II (55.14 km) Ludewala – Lalian I & II (44 km)	Jun-2022		0.14	0.28
8	C-1/C-2 PP – Ludewala	Apr-2011	125		125
9	C-3/C-4 PP – Ludewala	Apr-2011	125		125
10	Multan – Samundri Road I & II	Mar-1960		131	263
11	In/out of Multan – Samundri Road I & II at T.T. Singh Multan – T.T. Singh I & II (164.08 km) T.T. Singh – Samundri Road I & II (104.86 km)	Nov-2014		3	6
12	Samundri Road – Nishatabad I & II	Mar-1960		23	46
13	K.S. Kaku – Mangla HPP I & II	Mar-1978		97	194
14	K.S. Kaku – Mangla HPP III & IV	1967		96	192
15	In/out of K.S. Kaku – Mangla HPP IV at Gakkhar K.S. Kaku – Gakkhar (61 km) Gakkhar – Mangla HPP I (113 km)	Jun-1982		1	2
16	Gakkhar – Mangla HPP II & III	1993		36	72
17	In/out of K.S. Kaku – Gakkhar at Sialkot K.S. Kaku – Sialkot (97 km) Gakkhar – Sialkot (36 km)	Aug-1999		36	72
18	In/out of Gakkhar – Mangla HPP II at Nokhar Nokhar – Gakkhar (44.1 km) Nokhar – Mangla HPP (67.3 km)	May-2010		38	75
19	In/out of Nokhar – Mangla HPP at Gujrat Nokhar – Gujrat (63.3 km) Gujrat – Mangla HPP (82 km)	Apr-2017		39	78
20	In/out of Gakkhar – Mangla HPP III at Gujrat Gakkhar – Gujrat (32 km) Gujrat – Mangla HPP (82 km)	Apr-2017		39	78
21	K.S. Kaku – Bund Road I & II	Jun-1971		27	54
22	New Kot Lakhpat – Bund Road I & II	Jun-1988		18	36
23	New Kot Lakhpat – Sarfraz Nagar	Apr-1995	47	0	47
24	K.S. Kaku – Ravi I	Sep-2000	23.5	0	23.5
25	K.S. Kaku – Ravi II	Sep-2000	37.4	0	37.4
26	New Kot Lakhpat – Lahore I & II	Sep-1993		53	106
27	In/out of New Kot Lakhpat – Lahore II at Wapda Town New Kot Lakhpat – Wapda Town (24 km) Lahore – Wapda Town (42.2 km)	Jun-2011		7	13
28	In/out of K.S. Kaku – Ravi II at Shalamar K.S. Kaku – Shalamar (46 km) Shalamar – Ravi (11.6 km)	May-2014		10	20
29	In/out of K.S. Kaku – Shalamar at Ghazi Road K.S. Kaku – Ghazi Road (49.6 km) Ghazi Road – Shalamar (28.6 km)	Oct-2017		16	32
30	In/out of New Kot Lakhpat – Sarfraz Nagar at Ghazi Road	Feb-2020		28	56

Transmission Statistics

Sr. No.	Region Name	COD	S/C	D/C	Total Circuits Length (km)
	New Kot Lakhpat – Ghazi Road (32 km) Ghazi Road – Sarfraz Nagar (70.5 km)				
31	In/out of New Kot Lakhpat – Ghazi Road at Lahore South New Kot Lakhpat – Lahore South II (52.3 km) Ghazi Road – Lahore South (74.6 km)	Feb-2020		47	95
32	In/out of New Kot Lakhpat – Wapda Town at Lahore South New Kot Lakhpat – Lahore South I (50.5 km) Wapda Town – Lahore South (39.9 km)	Apr-2019		33	66
33	Sarfraz Nagar – Yousafwala I & II	1996		108	216
34	In/out of Sarfraz Nagar – Yousafwala I & II at Okara Sarfraz Nagar – Okara I & II (159 km) Okara – Yousafwala I & II (78 km)	Dec-2017		11	21
35	Bund Road – Lahore I & II	May-1994		26	52
36	Bund Road – Lahore III & IV	Dec-1992		28	56
37	Ravi – Lahore I & II	May-1994		38	76
38	In/out of Ravi – Lahore II at Atlas PP Ravi – Atlas PP (35.8 km) Lahore – Atlas PP (7.9 km)	Oct-2010		3	6
39	Trimmu PP – T.T. Singh I & II	Nov-2018		47	94
40	Trimmu PP – T.T. Singh III & IV	Nov-2018		46	92
41	In/out of Trimu PP – T.T. Singh IV at Faisalabad West Faisalabad West – Trimu PP (80 km) Faisalabad West – T.T. Singh (46 km)	Feb-2022		40	80
	Total		358	1,436	3,310
	Hyderabad				
1	Jamshoro – K.D.A I & II	Dec-1984		130	260
2	In/Out of Jamshoro – KDA I& II at Jhimpir-II Jhimpir II – KDA I& II (84 km) Jhimpir II – Jamshoro (55 km)	Mar-2022		9	18
3	Jamshoro – Hala Road I & II	Jun-1990 Jul-1993		14	28
4	Jamshoro – T.M. Khan Road I & II	Jul-2006		45.5	91
5	Guddu – Sibbi	Oct-1998	89	0	89.4
6	Guddu – Shikarpur I & II	May-2005		144.4	288.8
7	In/Out of Guddu – Shikarpur I at Uch-I PP Guddu – Uch-I PP I (89.4 km) Shikarpur – Uch-I PP I (55.6 km)	May-2005		27.8	55.5
8	In/Out of Guddu – Uch-I PP at Shikarpur Guddu – Shikarpur III (138.6 km) Shikarpur – Uch-I PP II (52.8 km)	Mar-2016		23.8	47.6
9	Engro PP – Dharki I & II	Dec-2009		34.6	69.2
10	In/Out of Engro PP – Dharki II at Foundation PP Engro PP – Foundation PP (34.6 km) Foundation PP – Dharki (0.17 km)	Aug-2010		0.1	0.2
11	Rohri – Engro PP I & II	Dec-2010 Aug-2013		60	120
12	Shikarpur – Rohri -I & II	Jun-2012 Oct-2013		60.2	120.4
13	Jhimpir –T.M. Khan Road I & II	Jul-2016		84	168
14	Jhimpir – Gharo I & II			76	152
	Total		89	709	1,508
	Islamabad Region				
1	Tarbela HPP – Mardan I & II	Nov-1975		67	134
2	Sheikh Muhammadi – Daudkhel I & II	Sep-1995		123	246
3	Daudkhel – C-1/C-2 PP I & II	Apr-1998		70	139
4	Daudkhel – Bannu I & II	Aug-2004		110	220

Transmission Statistics

Sr. No.	Region Name	COD	S/C	D/C	Total Circuits Length (km)
5	Sheikh Muhammadi – Shahi Bagh	Dec-2005	38		38
6	Ghazi Brotha HPP – Shahi Bagh	Aug-2008	85		85
7	Ghazi Brotha HPP – Sheikh Muhammadi	Aug-2008	85		85
8	In/Out of Ghazi Brotha HPP – Shahi Bagh at Mardan Ghazi Brotha HPP – Mardan (85 km) Mardan – Shahi Bagh (58 km)	Dec-2012		29	58
9	In/Out of Mardan – Shahi Bagh at Chakdara Mardan – Chakdara (70 km) Chakdara – Shahi Bagh (105 km)	Sep-2018 & Aug-2019		58.5	117
10	In/Out of Ghazi Brotha HPP – Mardan at Nowshera Ghazi Brotha HPP – Nowshera I (45 km) Mardan – Nowshera (46 km)	Apr-2019		3	6
11	In/Out of Ghazi Brotha HPP – Sheikh Muhammadi at Nowshera Ghazi Brotha HPP – Nowshera II (45 km) Sheikh Muhammadi – Nowshera (50 km)	Apr-2019		5	10
12	C-3/C-4 PP – Bannu I & II	Oct-2016		126	252
13	C-1/C-2 PP – C-3/C-4 PP	Apr-2011	3		3
14	In/Out of C-1/C-2 PP – C-3/C-4 PP at D.I. Khan C-1/C-2 PP – D.I. Khan (84.4 km) C-3/C-4 PP – D.I. Khan (84.4 km)	Feb-2019		82.9	165.8
15	Allai Khawar HPP – Sangjani (ISPR) I & II	Aug-2011		182	364
16	In/Out of Allai Khawar HPP – Sangjani I & II at New Mansehra Allai Khawar HPP – New Mansehra I & II (166 km) Sangjani – New Mansehra I & II (201 km)	Apr-2012		1.5	3
17	Tarbela HPP – Burhan I & II	Jun-1977		35	70
18	Tarbela HPP – Burhan III & IV	Jun-1977		35	70
19	In/Out of Tarbela HPP – Burhan IV at Sangjani Burhan – Sangjani (27 km) Tarbela HPP – Sangjani (63 km)	Dec-1998		27.5	55
20	Rawat – Sangjani I & II	Jun-1977		43	86
21	In/Out of Rawat – Sangjani II at Bahria Town Rawat – Bahria Town (10.3 km) Bahria Town – Sangjani (32.5 km)	Dec-1998		0.1	0.2
22	Rawat – Islamabad University I & II	Sep-2004		50	100
23	Mangla HPP – Rawat I & II	Jun-1977		80	160
24	Mangla HPP – K.S. Kaku I & II	Mar-1978		74	147
25	K.S. Kaku – Mangla HPP III & IV	May-1905		76	152
	Total		211	1,278	2,766
	Multan Region				
1	Multan – NGPS I & II	Feb-1998 Jul-1995		15.2	30
2	Multan – Samundri Road I & II	Mar-1960		65	130
3	In/out of Multan – Samundri Road I & II at T.T. Singh Multan – T.T. Singh I & II (130 km) T.T. Singh – Samundri Road I & II (In Lahore Region)	Nov-2014			
4	In/out of Multan – Samundri Road I & II at T.T. Singh	Mar-1994		58	116
5	Multan – T.T. Singh I & II (130 km)	Jan-1995		56	112
6	In/out of TPS Muzaffargarh – Multan II at Muzaffargarh Multan – Muzaffargarh (55.4 km) TPS Muzaffargarh – Muzaffargarh (0.86 km)	Jun-2008		0.1	0.3
7	TPS Muzaffargarh – AES Lalpir PP I & II	Aug-1997		18	36
8	TPS Muzaffargarh – PARCO I	Feb-2000	32		32
9	TPS Muzaffargarh – PARCO II	Feb-2000	24		24
10	TPS Muzaffargarh – Bahawalpur I & II	Feb-2005		109	218
11	KAPCO PP – Multan III & IV	Aug-1989		100	200

Transmission Statistics

Sr. No.	Region Name	COD	S/C	D/C	Total Circuits Length (km)
12	KAPCO PP – Multan V & VI	Feb-1998		79	158
13	KAPCO PP – TPS Muzaffargarh I & II	Jul-1993		49	98
14	In/out of KAPCO PP – TPS Muzaffargarh II at AES Pak Gen PP TPS Muzaffargarh – AES Pak Gen PP (18 km) KAPCO PP – AES Pak Gen PP (67 km)	Feb-2000		18	36
15	Yousafwala – Vehari I & II	Apr-1996		109	218
16	In/out of Yousafwala – Vehari I & II at Kassowal Yousafwala – Kassowal I & II (200 km) Kassowal – Vehari I & II (150 km)	Jul-2015		66	132
17	Vehari – Multan I & II	Mar-1998 Feb-1998		79	158
18	Vehari – Chishtian I & II	Feb-1998		88	176
19	Bahawalpur – Lal Sohanra I & II	Oct-2017		37	73
Total			627	1,121	1,948
QUETTA					
1	Guddu – Sibbi	Oct-1998	163.6		163.6
2	In/Out of Guddu – Shikarpur I at Uch-I PP Guddu – Uch-I PP (75.6 km) Shikarpur – Uch-I PP I (34.8 km)	May-2005		27.75	55.5
3	In/Out of Guddu – Uch-I PP at Shikarpur Guddu – Shikarpur III (In Hyderabad Region) Shikarpur – Uch-I PP II (59.2 km)	Mar-2016		19	38
4	Dadu – Khuzdar I & II	Apr-2013 Jun-2014		274.27	548.54
5	Sibbi – Quetta I & II	Sep-1995		128	256
6	D.G. Khan – Loralai I & II	Aug-2013		227	454
7	Sibbi – Uch-I PP I	Oct-1988	127		127
8	Sibbi – Uch-I PP II	Oct-1988	106		106
9	In/Out of Shikarpur – Uch-I PP I at Uch-II PP Shikarpur – Uch-II PP (95.4 km) Uch-II PP – Uch-I PP (1 km)	Apr-2022		3	6
10	Sibbi – Uch-II PP I & II	May-2018		115	230
11	In/Out of Sibbi – Uch-I PP II at D.M. Jamali Sibbi – D.M. Jamali (104 km) D.M. Jamali – Uch-I PP (4 km)	May-2018		1	2
Quetta Total			397	795	1,987
Grand Total					11,518

Distribution Statistics



2021-22

	DISCOs Energy Sales	107,866 GWh
	DISCOs Number of Consumers	33,189,796
	Recorded Maximum Demand	24,564 MW
	Computed Maximum Demand	31,271 MW
	Distribution Losses 132/11 kV	16.85 %

Table 3.1
DISCO-wise Sale (GWh) of Electricity

DISCO & Category		2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
LESCO	Domestic	6,278	6,551	7,220	8,160	9,021	9,043	9,259	9,664	10,354
	Commercial	1,215	1,235	1,402	1,578	1,792	1,685	1,563	1,662	1,868
	Industrial	6,773	6,888	6,896	6,173	7,587	8,153	7,381	8,351	9,775
	Bulk Supply	446	469	514	572	661	667	627	654	720
	Agricultural	1,127	1,084	1,203	1,197	1,260	1,147	1,116	1,188	1,332
	Public Lighting	103	94	98	95	119	110	117	140	139
	Others	7	8	8	7	8	327	547	693	883
	Total	15,948	16,329	17,342	17,783	20,448	21,132	20,610	22,352	25,071
GEPSCO	Domestic	3,878	3,987	4,564	5,081	5,757	5,805	5,944	6,373	6,817
	Commercial	399	406	478	545	615	630	594	672	758
	Industrial	1,965	2,077	2,371	2,424	2,696	2,597	2,397	2,776	2,797
	Bulk Supply	275	293	326	355	382	399	396	411	441
	Agricultural	304	285	342	364	401	449	475	542	535
	Public Lighting	6	6	7	8	8	7	7	10	13
	Others	1	1	1	1	28	117	132	139	167
	Total	6,828	7,055	8,089	8,778	9,887	10,004	9,945	10,922	11,529
FESCO	Domestic	4,256	4,426	5,037	5,710	6,507	6,486	6,656	7,062	7,391
	Commercial	483	492	563	658	738	737	713	770	848
	Industrial	3,804	3,972	3,939	3,845	4,221	4,698	4,133	4,937	5,822
	Bulk Supply	296	317	359	341	339	268	255	238	214
	Agricultural	831	788	790	930	1,067	1,108	1,139	1,268	1,367
	Public Lighting	7	7	8	11	12	10	10	13	18
	Others	4	4	5	4	42	192	216	213	260
	Total	9,682	10,006	10,700	11,499	12,925	13,500	13,122	14,501	15,919
IESCO	Domestic	3,681	3,704	4,093	4,557	5,035	4,991	5,028	5,325	5,757
	Commercial	894	844	932	1,073	1,200	1,202	1,099	1,166	1,306
	Industrial	1,644	1,671	1,663	1,744	1,862	1,811	1,487	1,521	1,686
	Bulk Supply	1,798	1,756	1,913	2,071	2,284	2,359	2,277	2,338	2,542
	Agricultural	93	93	98	106	96	47	27	35	36
	Public Lighting	78	76	71	72	73	74	77	81	83
	Others	4	4	4	4	56	305	446	478	552
	Total	8,192	8,147	8,774	9,628	10,606	10,789	10,441	10,943	11,962
MEPCO	Domestic	5,518	6,014	6,627	7,567	8,896	8,915	9,470	9,825	10,244
	Commercial	640	657	730	846	967	946	903	981	1,077
	Industrial	2,991	3,071	2,855	2,290	2,961	3,011	2,509	2,861	3,460
	Bulk Supply	173	200	224	252	293	295	276	276	294
	Agricultural	2,090	1,745	1,880	2,271	2,653	2,880	2,917	3,201	3,737
	Public Lighting	17	16	16	20	20	18	18	20	23
	Others	8	8	8	7	63	245	289	302	367
	Total	11,437	11,711	12,341	13,253	15,853	16,310	16,382	17,466	19,202

Distribution Statistics

DISCOs & Category		2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
PESCO	Domestic	4,205	4,297	4,482	4,883	4,928	4,829	5,099	5,373	5,689
	Commercial	622	654	703	739	770	792	775	802	874
	Industrial	1,989	2,020	1,956	2,132	2,322	2,343	2,008	2,274	2,528
	Bulk Supply	539	520	545	580	642	668	652	642	698
	Agricultural	100	93	82	83	79	67	69	79	77
	Public Lighting	14	14	13	13	13	13	13	13	12
	Others	3	2	3	2	41	363	427	426	476
	Total	7,471	7,599	7,783	8,432	8,796	9,075	9,043	9,608	10,355
TESCO	Domestic	1,227	973	881	1,017	1,195	1,213	1,415	1,402	1,469
	Commercial	10	6	7	7	6	5	5	5	5
	Industrial	62	63	88	144	228	327	330	554	547
	Bulk Supply	7	7	8	8	9	9	10	12	13
	Agricultural	60	52	44	50	42	36	32	31	26
	Public Lighting	0	0	0	0	0	0	0	0	0
	Others	0	0	0	0	2	12	10	9	11
	Total	1,366	1,101	1,028	1,227	1,482	1,603	1,802	2,013	2,072
HESCO	Domestic	2,074	2,421	2,095	2,149	2,342	2,156	2,394	2,408	2,299
	Commercial	260	271	280	308	315	295	262	265	264
	Industrial	770	760	813	721	759	753	717	824	915
	Bulk Supply	85	105	92	94	105	113	107	106	113
	Agricultural	446	416	420	400	373	264	214	201	208
	Public Lighting	47	43	36	35	38	28	3	5	8
	Others	3	4	4	4	96	308	193	205	228
	Total	3,684	4,020	3,739	3,712	4,027	3,916	3,890	4,014	4,035
SEPCO	Domestic	1,650	1,621	1,532	1,651	1,759	1,597	1,766	1,796	1,795
	Commercial	171	181	207	236	219	210	209	227	236
	Industrial	417	424	433	439	466	420	365	373	412
	Bulk Supply	142	141	150	177	178	177	160	166	206
	Agricultural	243	242	241	245	245	110	81	85	87
	Public Lighting	77	71	43	39	27	20	16	23	40
	Others	1	2	2	1	68	247	112	106	114
	Total	2,702	2,682	2,608	2,788	2,963	2,781	2,709	2,776	2,299
QESCO	Domestic	575	573	594	637	672	557	612	588	592
	Commercial	102	109	115	125	131	127	137	139	151
	Industrial	134	140	136	153	173	172	161	192	172
	Bulk Supply	94	101	108	115	122	127	127	131	141
	Agricultural	2,837	3,068	3,263	3,417	3,762	3,567	3,572	3,486	3,517
	Public Lighting	2	3	4	5	8	9	10	10	11
	Others	0	0	0	0	47	219	224	231	248
	Total	3,744	3,994	4,220	4,453	4,916	4,779	4,843	4,775	4,035

Table 3.2
Province-wise consumption of electricity (GWh)

Province	Category	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Punjab	Domestic	23,611	24,682	27,541	31,075	35,216	35,240	36,357	38,248	40,563
	Commercial	3,631	3,634	4,105	4,700	5,312	5,200	4,872	5,251	5,857
	Industrial	17,176	17,678	17,724	16,477	19,327	20,270	17,907	20,446	23,540
	Bulk Supply	2,988	3,035	3,336	3,591	3,959	3,988	3,831	3,917	4,211
	Agricultural	4,445	3,996	4,312	4,868	5,477	5,631	5,674	6,234	7,007
	P Lighting	212	199	201	206	232	219	229	264	276
	Others	24	25	26	23	197	1,186	1,630	1,825	2,229
	Total	52,087	53,249	57,246	60,941	69,719	71,735	70,500	76,184	83,683
Khyber Pakhtunkhwa	Domestic	5,432	5,270	5,363	5,900	6,123	6,042	6,514	6,775	7,159
	Commercial	632	660	710	746	776	797	780	807	879
	Industrial	2,051	2,083	2,044	2,276	2,550	2,670	2,338	2,828	3,076
	Bulk Supply	546	527	553	588	651	677	662	654	711
	Agricultural	160	145	127	133	121	103	101	110	103
	P Lighting	14	14	13	13	13	13	13	13	12
	Others	3	2	3	2	43	375	437	435	487
	Total	8,837	8,700	8,812	9,659	10,278	10,678	10,845	11,621	12,426
Sindh	Domestic	3,724	4,042	3,627	3,800	4,101	3,752	4,160	4,204	4,094
	Commercial	431	452	487	544	534	505	471	492	500
	Industrial	1,187	1,184	1,246	1,160	1,225	1,173	1,082	1,197	1,327
	Bulk Supply	227	246	242	271	283	290	267	272	319
	Agricultural	689	658	661	645	618	374	295	286	295
	P Lighting	124	114	79	74	65	48	19	28	48
	Others	4	6	6	5	164	555	305	311	342
	Total	6,386	6,702	6,347	6,500	6,990	6,697	6,599	6,790	6,925
Balochistan	Domestic	575	573	594	637	672	557	612	588	592
	Commercial	102	109	115	125	131	127	137	139	151
	Industrial	134	140	136	153	173	172	161	192	172
	Bulk Supply	94	101	108	115	122	127	127	131	141
	Agricultural	2,837	3,068	3,263	3,417	3,762	3,567	3,572	3,486	3,517
	P Lighting	2	3	4	5	8	9	10	10	11
	Others	0	0	0	0	47	219	224	231	248
	Total	3,744	3,994	4,220	4,453	4,916	4,779	4,843	4,775	4,832
Total	Domestic	33,342	34,567	37,125	41,413	46,112	45,590	47,643	49,814	52,406
	Commercial	4,796	4,854	5,416	6,115	6,753	6,629	6,260	6,689	7,387
	Industrial	20,548	21,085	21,150	20,066	23,275	24,285	21,488	24,662	28,115
	Bulk Supply	3,854	3,909	4,239	4,565	5,015	5,082	4,887	4,974	5,383
	Agricultural	8,132	7,867	8,363	9,064	9,979	9,676	9,642	10,116	10,922
	P Lighting	351	330	296	298	318	291	271	315	348
	Others	31	33	35	30	451	2,335	2,596	2,802	3,306
	Total	71,054	72,645	76,625	81,551	91,902	93,888	92,790	99,370	107,866

Table 3.3
DISCO-wise Number of consumers

DISCO & Category		2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
LESCO	Domestic	3,052,697	3,228,510	3,403,443	3,556,800	3,848,417	4,108,067	4,374,998	4,688,342	5,018,720
	Commercial	524,702	542,738	561,030	576,691	602,268	623,529	6,43,245	664,548	687,951
	Industrial	75,006	77,277	79,588	81,640	84,183	84,703	86,138	87,918	89,934
	Bulk Supply	491	490	490	496	499	494	488	469	459
	Agricultural	57,313	58,382	59,136	59,664	60,621	61,547	63,671	66,101	68,250
	P Lighting	2,154	2,227	2,338	2,424	2,547	2,554	2,564	2,613	2,726
	Others	223	237	241	246	249	8,968	16,072	17,863	19,208
	Total	3,712,586	3,909,861	4,106,266	4,277,961	4,598,784	4,889,862	5,187,194	5,527,854	5,887,248
GEPCO	Domestic	2,419,346	2,506,136	2,621,619	2,726,893	2,860,915	3,021,760	3,192,199	3,387,417	3,591,198
	Commercial	304,496	313,573	324,937	334,915	349,789	366,047	379,270	394,248	410,372
	Industrial	57,965	60,542	63,705	66,845	70,063	73,133	74,244	76,337	80,524
	Bulk Supply	141	149	153	157	164	165	164	164	164
	Agricultural	41,583	42,563	43,055	43,594	44,749	46,887	50,460	52,960	54,982
	P Lighting	507	514	532	549	578	580	590	620	673
	Others	15	16	16	16	20,017	20,380	20,916	21,349	21,799
	Total	2,824,053	2,923,493	3,054,017	3,172,969	3,346,275	3,528,952	3,717,843	3,933,095	4,159,712
FESCO	Domestic	2,870,418	3,012,756	3,141,713	3,280,658	3,457,159	3,651,710	3,861,027	4,081,137	4,291,224
	Commercial	332,675	344,642	356,032	368,321	383,451	399,688	413,352	427,149	440,006
	Industrial	45,120	46,602	47,909	49,350	49,314	50,027	50,911	52,253	53,475
	Bulk Supply	215	218	227	229	232	223	226	229	231
	Agricultural	38,921	39,522	39,995	40,580	40,772	42,763	45,978	49,738	51,922
	P Lighting	1,470	1,500	1,566	1,640	1,719	1,782	1,860	1,882	1,913
	Others	111	117	123	128	20,485	25,216	28,110	29,414	30,371
	Total	3,288,930	3,445,357	3,587,565	3,740,906	3,953,132	4,171,409	4,401,464	4,641,802	4,869,142
IESCO	Domestic	2,013,135	2,085,256	2,174,389	2,270,874	2,405,253	2,528,865	2,649,394	2,785,586	2,972,324
	Commercial	340,920	350,988	362,837	374,610	394,381	411,219	426,132	443,927	464,632
	Industrial	14,534	15,048	15,480	15,979	16,053	16,272	16,359	17,089	17,664
	Bulk Supply	962	969	984	1,000	996	960	961	974	980
	Agricultural	8,052	8,192	8,293	8,436	7,182	7,087	7,068	7,242	7,391
	P Lighting	1,659	1,674	1,713	1,742	1,761	1,829	1,914	2,039	2,240
	Others	40	40	41	41	11,612	13,758	18,361	19,307	20,386
	Total	2,379,302	2,462,167	2,563,737	2,672,682	2,837,238	2,979,990	3,120,190	3,276,164	3,485,617
MEPCO	Domestic	4,278,223	4,508,987	4,746,997	5,050,877	5,371,111	5,748,493	6,090,985	6,415,415	6,788,616
	Commercial	455,088	476,683	494,523	514,327	536,876	559,213	579,011	600,662	618,271
	Industrial	49,599	51,135	52,845	54,176	54,772	56,121	57,541	59,514	60,717
	Bulk Supply	420	429	437	452	460	454	458	459	464
	Agricultural	75,484	77,317	78,399	79,965	79,965	85,977	93,884	99,127	102,709
	P Lighting	1,365	1,402	1,448	1,470	1,494	1,501	1,592	1,666	1,742
	Others	117	120	124	125	28,105	33,673	37,834	40,837	42,436
	Total	4,860,296	5,116,073	5,374,773	5,701,392	6,072,783	6,485,432	6,861,311	7,217,680	7,614,955

Distribution Statistics

DISCO & Category		2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
PESCO	Domestic	2,523,470	2,602,181	2,703,406	2,805,422	2,908,414	3,029,784	3,193,810	3,374,867	3,546,157
	Commercial	289,155	298,739	309,919	321,802	337,386	349,985	362,163	377,987	393,995
	Industrial	29,760	30,344	31,204	32,023	29,872	26,582	26,919	27,591	28,205
	Bulk Supply	878	888	891	904	925	887	886	892	897
	Agricultural	23,441	23,328	23,371	23,289	23,083	22,896	22,968	23,049	23,121
	P Lighting	1,028	1,040	1,057	1,088	1,096	1,083	1,119	1,163	1,203
	Others	46	47	48	48	30,131	41,228	42,244	43,405	44,735
	Total	2,867,778	2,956,567	3,069,896	3,184,576	3,330,907	3,472,445	3,650,130	3,848,954	4,038,313
TESCO	Domestic	400,600	400,608	401,229	402,521	402,209	402,027	402,004	402,072	402,084
	Commercial	28,202	28,217	28,277	28,382	28,625	28,688	28,790	29,047	29,763
	Industrial	4,081	4,101	4,142	4,236	4,268	4,243	4,271	4,287	4,362
	Bulk Supply	55	55	55	56	57	65	67	68	72
	Agricultural	8,548	8,576	8,031	6,741	6,118	6,187	6,194	6,238	6,252
	P Lighting	0	5	5	5	5	5	5	5	5
	Others	0	0	0	0	1,119	1,371	1,434	1,463	1,608
	Total	441,486	441,562	441,739	441,941	442,401	442,586	442,765	3,374,867	444,146
HESCO	Domestic	777,599	798,206	825,409	861,184	877,262	907,377	933,377	958,338	978,572
	Commercial	143,687	146,833	150,789	156,200	159,627	163,791	166,213	169,007	171,843
	Industrial	13,834	14,311	14,784	15,313	14,924	15,250	14,852	15,193	15,490
	Bulk Supply	322	332	334	335	337	342	344	345	346
	Agricultural	16,198	16,578	16,768	17,286	13,730	14,434	15,522	15,660	15,729
	P Lighting	533	533	533	540	540	540	572	572	573
	Others	90	95	96	98	14,293	13,926	13,800	13,875	13,941
	Total	952,263	976,888	1,008,713	1,050,956	1,080,713	1,115,660	1,144,680	1,172,990	1,196,494
SEPCO	Domestic	572,945	581,305	590,240	593,355	589,884	603,885	628,208	643,103	650,565
	Commercial	114,072	115,574	117,093	117,824	119,384	121,776	123,808	125,388	126,818
	Industrial	11,846	12,094	12,405	12,606	12,674	12,930	13,133	13,382	13,533
	Bulk Supply	497	504	503	507	519	527	632	535	540
	Agricultural	12,408	12,484	12,503	12,145	9,221	9,270	9,345	9,370	9,377
	P Lighting	410	412	414	412	421	425	442	445	449
	Others	18	19	19	19	13,205	13,319	13,347	13,494	13,496
	Total	712,196	722,392	733,177	736,868	745,308	762,132	7,88,816	805,717	814,778
QESCO	Domestic	414,231	423,876	432,262	442,895	453,232	463,332	477,757	491,006	503,579
	Commercial	102,089	105,721	108,797	112,445	116,267	120,311	123,504	127,814	131,817
	Industrial	3,549	3,662	3,754	3,877	3,730	3,688	3,719	3,802	3,832
	Bulk Supply	234	238	244	253	261	266	271	282	299
	Agricultural	28,630	31,139	31,504	31,824	29,580	29,608	29,599	29,639	29,623
	P Lighting	243	247	251	254	265	268	274	279	283
	Others	4	4	4	4	5,669	7,128	7,852	9,346	9,958
	Total	548,980	564,887	576,816	591,552	609,004	624,601	642,976	662,168	679,391

Table 3.4
Province-wise Number of Consumers

Province	Category	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Punjab	Domestic	16,088,161	16,886,102	17,942,855	19,058,895	20,168,603	21,357,897	22,662,082
	Commercial	2,099,359	2,168,864	2,266,765	2,359,696	2,441,010	2,530,534	2,621,232
	Industrial	259,527	267,990	274,385	280,256	285,193	293,111	302,314
	Bulk Supply	2,291	2,334	2,351	2,296	2,297	2,295	2,298
	Agricultural	228,878	232,239	233,289	244,261	261,061	275,168	285,254
	P Lighting	7,597	7,825	8,099	8,246	8,520	8,820	9,294
	Others	545	556	80,468	101,995	121,293	128,770	134,200
	Total	18,686,358	19,565,910	20,808,212	22,055,645	23,287,977	24,596,595	26,016,674
Khyber Pakhtunkhwa	Domestic	3,104,635	3,207,943	3,310,623	3,431,811	3,595,814	3,776,939	3,948,241
	Commercial	338,196	350,184	366,011	378,673	390,953	407,034	423,758
	Industrial	35,346	36,259	34,140	30,825	31,190	31,878	32,567
	Bulk Supply	946	960	982	952	953	960	969
	Agricultural	31,402	30,030	29,201	29,083	29,162	29,287	29,373
	P Lighting	1,062	1,093	1,101	1,088	1,124	1,168	1,208
	Others	48	48	31,250	42,599	43,678	44,868	46,343
	Total	3,511,635	3,626,517	3,773,308	3,915,031	4,092,874	4,292,134	4,482,459
Sindh	Domestic	1,415,649	1,454,539	1,467,146	1,511,262	1,561,585	1,601,441	1,629,137
	Commercial	267,882	274,024	279,011	285,567	290,021	294,395	298,661
	Industrial	27,189	27,919	27,598	28,180	27,985	28,575	29,023
	Bulk Supply	837	842	856	869	976	880	886
	Agricultural	29,271	29,431	22,951	23,704	24,867	25,030	25,106
	P Lighting	947	952	961	965	1,014	1,017	1,022
	Others	115	117	27,498	27,245	27,147	27,369	27,437
	Total	1,741,890	1,787,824	1,826,021	1,877,792	1,933,595	1,978,707	2,011,272
Balochistan	Domestic	432,262	442,895	453,232	463,332	477,757	491,006	503,579
	Commercial	108,797	112,445	116,267	120,311	123,504	127,814	131,817
	Industrial	3,754	3,877	3,730	3,688	3,719	3,802	3,832
	Bulk Supply	244	253	261	266	271	282	299
	Agricultural	31,504	31,824	29,580	29,608	29,599	29,639	29,623
	P Lighting	251	254	265	268	274	279	283
	Others	4	4	5,669	7,128	7,852	9,346	9,958
	Total	576,816	591,552	609,004	624,601	642,976	662,168	679,391
Total	Domestic	21,040,707	21,991,479	23,173,856	24,465,300	25,803,759	27,227,283	28,743,039
	Commercial	2,814,234	2,905,517	3,028,054	3,144,247	3,245,488	3,359,777	3,475,468
	Industrial	325,816	336,045	339,853	342,949	348,087	357,366	367,736
	Bulk Supply	4,318	4,389	4,450	4,383	4,497	4,417	4,452
	Agricultural	321,055	323,524	315,021	326,656	344,689	359,124	369,356
	P Lighting	9,857	10,124	10,426	10,567	10,932	11,284	11,807
	Others	712	725	144,885	178,967	199,970	210,353	217,938
	Total	24,516,699	25,571,803	27,016,545	28,473,069	29,957,422	31,529,604	33,189,796

Table 3.5
System Energy Purchased, Sold and Losses

Year	Energy Purchased by CPPA (GWh)	NTDC Transmission Losses		Units Purchased by DISCOs at 132 kV (GWh)	Units Purchased Directly by DISCOs (GWh)	Distribution Losses below 132 kV		Units Sold by DISCOs to Consumers (GWh)	Transmission & Distribution Losses	
		Total	Percentage			Total	Percentage		Total	Percentage
		(GWh)	(%)			(GWh)	(%)		(GWh)	(%)
1981-82	14,378							10,288	4,090	28.4
1982-83	16,093							11,587	4,506	28.0
1983-84	17,655							12,762	4,893	27.7
1984-85	18,376							13,756	4,620	25.1
1985-86	20,656							15,504	5,152	24.9
1986-87	23,228							17,745	5,483	23.6
1987-88	27,002							20,702	6,300	23.3
1988-89	28,410							21,982	6,428	22.6
1989-90	30,809							24,121	6,688	21.7
1990-91	33,580							26,585	6,995	20.8
1991-92	37,143							29,267	7,876	21.2
1992-93	39,854							31,272	8,582	21.5
1993-94	41,289							32,131	9,158	22.2
1994-95	44,932	3,522	7.8	41,410		6,378	15.40	35,032	9,900	23.2
1995-96	47,434	3,692	7.8	43,742		6,817	15.58	36,925	10,509	23.4
1996-97	49,564	4,169	8.4	45,395		6,866	15.13	38,529	11,035	23.5
1997-98	52,192	4,470	8.6	47,722		8,300	17.39	39,422	12,770	26.0
1998-99	52,752	4,181	7.9	48,571		9,671	19.91	38,900	13,852	27.8
1999-00	54,672	4,017	7.3	50,655		9,745	19.24	40,910	13,762	26.6
2000-01	57,282	4,594	8.0	52,688		9,304	17.66	43,384	13,898	25.7
2001-02	59,545	4,600	7.7	54,945		9,741	17.73	45,204	14,341	25.5
2002-03	62,694	4,908	7.8	57,786		10,365	17.94	47,421	15,273	25.8
2003-04	67,697	5,054	7.5	62,643		11,151	17.80	51,492	16,205	25.3
2004-05	71,670	5,467	7.6	66,203		10,925	16.50	55,278	16,392	24.1
2005-06	80,404	5,839	7.3	74,565		12,160	16.31	62,405	17,999	23.6
2006-07	85,987	3,268	3.8	82,719		15,239	18.42	67,480	18,507	22.2
2007-08	84,584	2,948	3.5	81,636		15,097	18.49	66,539	18,044	22.0
2008-09	82,702	2,959	3.6	79,743		14,457	18.13	65,286	17,416	21.7
2009-10	87,115	2,740	3.1	84,375		15,497	18.37	68,878	18,237	21.5
2010-11	89,775	2,740	3.1	87,035	686	16,163	18.57	71,672	18,903	21.6
2011-12	88,987	2,508	2.8	86,479	736	15,847	18.32	71,368	18,355	21.1
2012-13	87,080	2,656	3.1	84,424	1,190	15,106	17.89	70,508	17,762	20.9
2013-14	93,777	2,587	2.8	91,190	1,367	16,326	17.90	76,543	18,913	20.7
2014-15	96,463	2,620	2.7	93,843	1,498	16,744	17.84	78,113	19,364	20.6
2015-16	100,871	2,623	2.6	93,385	265	16,762	17.1	76,623	19,385	19.2
2016-17	106,796	2,466	2.3	99,390	272	17,833	17.1	81,557	20,299	19.0
2017-18	120,082	2,923	2.4	112,508	665	20,606	18.3	91,902	23,529	19.5
2018-19	122,302	3,464	2.8	114,086	407	20,199	17.7	93,888	23,663	19.3
2019-20	122,541	3,364	2.7	112,911	171	20,120	17.8	92,791	23,484	19.3
2020-21	130,060	3,673	2.8	120,192	217	20,822	17.3	99,371	24,495	18.8
2021-22	143,031	4,055	2.8	129,725	161	21,859	16.9	107,866	25,914	18.1

Table 3.6
Category-wise Sale (GWh) of Electricity - DISCOs

Year	Domestic	Commercial	Industrial	Agricultural	Public Lighting	Bulk Supply	Others	Total
1981-82	2,408	574	3,960	2,357	74	873	42	10,288
1982-83	2,866	634	4,427	2,546	78	992	44	11,586
1983-84	3,470	739	4,708	2,663	75	1,069	38	12,762
1984-85	3,887	796	5,061	2,783	77	1,115	37	13,756
1985-86	4,513	875	5,894	2,880	90	1,215	36	15,504
1986-87	5,357	991	6,436	3,452	110	1,361	38	17,745
1987-88	6,290	1,054	7,236	4,394	117	1,571	40	20,703
1988-89	6,939	1,068	7,578	4,356	127	1,755	75	21,899
1989-90	7,647	1,106	8,360	5,004	148	1,646	38	23,950
1990-91	8,617	1,152	9,115	5,596	178	1,700	33	26,391
1991-92	9,691	1,192	10,213	5,823	229	1,799	39	28,985
1992-93	11,220	1,303	10,913	5,595	195	1,925	27	31,178
1993-94	11,963	1,318	10,532	5,743	216	1,964	27	31,763
1994-95	13,448	1,490	10,604	6,220	252	2,112	22	34,148
1995-96	14,792	1,648	10,335	6,657	301	2,377	20	36,130
1996-97	15,594	1,757	10,115	7,018	308	2,485	19	37,296
1997-98	16,367	1,768	10,238	6,888	307	2,694	16	38,277
1998-99	16,927	1,825	9,945	5,575	159	2,646	15	37,092
1999-00	18,942	2,003	10,773	4,512	150	2,676	15	39,070
2000-01	20,019	2,120	11,744	4,896	146	2,634	14	41,573
2001-02	20,549	2,285	12,637	5,582	149	2,662	12	43,875
2002-03	20,855	2,516	13,462	5,986	166	2,626	10	45,620
2003-04	22,668	2,884	14,476	6,624	192	2,796	9	49,649
2004-05	24,049	3,192	15,568	6,921	227	2,892	12	52,862
2005-06	27,009	3,768	16,596	7,873	279	3,031	13	58,569
2006-07	28,990	4,290	17,603	8,097	316	3,252	27	62,575
2007-08	28,711	4,359	17,299	8,380	340	3,318	50	62,456
2008-09	27,753	4,204	16,035	8,694	348	3,189	39	60,263
2009-10	29,477	4,466	16,372	9,584	371	3,357	32	63,659
2010-11	30,971	4,684	17,696	8,847	375	3,608	30	66,211
2011-12	30,364	4,563	18,401	8,414	361	3,509	27	65,639
2012-13	30,329	4,434	18,635	7,548	351	3,660	28	64,986
2013-14	33,342	4,796	20,548	8,132	351	3,854	31	71,054
2014-15	34,567	4,854	21,085	7,867	330	3,909	33	72,645
2015-16	37,125	5,416	21,150	8,363	296	4,239	35	76,625
2016-17	41,413	6,115	20,066	9,064	298	4,565	30	81,551
2017-18	46,112	6,753	23,275	5,015	9,979	318	451	91,902
2018-19	45,590	6,629	24,285	5,082	9,676	291	2,335	93,888
2019-20	47,643	6,260	21,488	4,887	9,642	271	2,596	92,791
2020-21	49,814	6,689	24,662	4,974	10,116	315	2,802	99,371
2021-22	52,406	7,387	28,115	5,383	10,922	348	3,306	107,866

Table 3.7
Category-wise Number of Consumers – DISCOs

Year	Domestic	Commercial	Industrial	Bulk Supply	Agricultural	Public Lighting	Others	Total
1981-82	2,732,903	624,900	115,890	1,118	111,278	2,161		3,588,250
1982-83	2,989,397	674,600	119,417	1,225	114,390	2,390		3,901,419
1983-84	3,261,362	724,462	123,508	1,428	118,265	2,511		4,231,536
1984-85	3,500,171	770,465	128,441	1,541	120,905	2,447		4,523,970
1985-86	3,779,838	834,127	133,573	1,684	124,918	2,647		4,876,787
1986-87	4,106,424	898,118	139,537	1,772	130,034	2,801		5,278,686
1987-88	4,525,987	964,377	147,439	1,943	136,860	3,017		5,779,623
1988-89	5,077,686	1,039,033	153,042	2,075	143,869	3,462		6,419,167
1989-90	5,467,690	1,088,932	158,800	2,250	149,554	3,453		6,870,679
1990-91	5,805,382	1,134,754	162,624	2,261	152,169	3,531		7,260,721
1991-92	6,219,656	1,185,723	169,436	2,362	155,305	3,759		7,736,241
1992-93	6,622,977	1,221,223	172,145	2,488	153,088	3,829		8,175,750
1993-94	6,995,561	1,257,887	174,577	2,577	157,710	3,730		8,592,042
1994-95	7,376,032	1,342,946	179,392	2,649	162,303	3,954		9,067,276
1995-96	7,783,832	1,344,975	181,092	2,728	165,114	3,990		9,481,731
1996-97	8,154,894	1,354,940	184,301	3,168	167,245	4,064		9,868,612
1997-98	8,455,442	1,396,973	186,539	2,911	170,562	4,645		10,217,072
1998-99	8,911,587	1,517,199	190,084	2,979	173,078	4,708		10,799,635
1999-00	9,553,828	1,653,870	194,566	3,045	174,456	4,892		11,584,657
2000-01	10,045,035	1,737,199	195,511	3,195	180,411	4,993		12,166,344
2001-02	10,482,804	1,803,132	199,839	3,361	184,032	4,854		12,678,022
2002-03	11,043,530	1,867,226	206,336	3,739	191,961	5,441		13,318,233
2003-04	11,737,078	1,935,462	210,296	3,873	198,829	5,800		14,091,338
2004-05	12,490,189	1,983,216	212,233	3,677	200,756	6,171		14,896,242
2005-06	13,389,762	2,068,312	222,283	3,753	220,501	6,550		15,911,161
2006-07	14,354,365	2,151,971	233,162	3,811	236,255	6,990		16,986,554
2007-08	15,226,139	2,229,403	242,401	3,849	245,640	7,337	597	17,955,366
2008-09	15,858,823	2,291,628	253,089	3,907	258,368	7,680	619	18,674,114
2009-10	16,672,413	2,362,312	263,507	3,986	271,268	8,112	626	19,582,224
2010-11	17,321,535	2,421,221	273,067	4,044	280,603	8,386	627	20,309,483
2011-12	17,977,782	2,482,702	286,401	4,107	286,287	8,698	634	21,046,611
2012-13	18,712,912	2,550,808	296,849	4,163	301,115	9,107	646	21,875,600
2013-14	19,322,664	2,635,086	305,294	4,215	310,578	9,369	664	22,587,870
2014-15	20,147,821	2,723,708	315,116	4,272	318,081	9,554	695	23,519,247
2015-16	21,040,707	2,814,234	325,816	4,318	321,055	9,857	712	24,516,699
2016-17	21,991,479	2,905,517	336,045	4,389	323,524	10,124	725	25,571,803
2017-18	23,173,856	3,028,054	339,853	4,450	315,021	10,426	144,885	27,016,545
2018-19	24,465,300	3,144,247	342,949	4,383	326,656	10,567	178,967	28,473,069
2019-20	25,803,759	3,245,488	348,087	4,497	344,689	10,932	199,970	29,957,422
2020-21	27,227,283	3,359,777	357,366	4,417	359,124	11,284	210,353	31,529,604
2021-22	28,743,039	3,475,468	367,736	4,452	369,356	11,807	217,938	33,189,796

Table 3.8
Electricity Consumption per Consumer (kWh)

Year	Domestic	Commercial	Industrial	Agricultural	Total
1981-82	881	918	34,174	21,177	2,867
1982-83	959	940	37,069	22,257	2,970
1983-84	1,064	1,020	38,119	22,520	3,016
1984-85	1,111	1,033	39,406	23,018	3,041
1985-86	1,194	1,049	44,129	23,056	3,179
1986-87	1,304	1,103	46,122	26,551	3,362
1987-88	1,390	1,093	49,077	32,109	3,582
1988-89	1,367	1,028	49,519	30,280	3,424
1989-90	1,399	1,016	52,642	33,461	3,511
1990-91	1,484	1,015	56,047	36,773	3,662
1991-92	1,558	1,005	60,277	37,491	3,784
1992-93	1,694	1,067	63,392	36,548	3,825
1993-94	1,710	1,048	60,328	36,412	3,740
1994-95	1,823	1,110	59,108	38,323	3,864
1995-96	1,900	1,225	57,070	40,320	3,894
1996-97	1,912	1,297	54,883	41,962	3,904
1997-98	1,936	1,265	54,884	40,383	3,858
1998-99	1,899	1,203	52,317	32,213	3,602
1999-00	1,983	1,211	55,368	25,861	3,531
2000-01	1,993	1,220	60,068	27,137	3,566
2001-02	1,960	1,267	63,235	30,329	3,566
2002-03	1,888	1,347	65,244	31,181	3,561
2003-04	1,931	1,490	68,837	33,317	3,654
2004-05	1,925	1,609	73,354	34,476	3,711
2005-06	2,017	1,822	74,663	35,705	3,922
2006-07	2,020	1,993	75,498	34,274	3,973
2007-08	1,886	1,955	71,365	34,114	3,705
2008-09	1,750	1,835	63,358	33,649	3,496
2009-10	1,768	1,890	62,130	35,332	3,251
2010-11	1,788	1,934	64,804	31,529	3,260
2011-12	1,689	1,838	64,250	29,391	3,119
2012-13	1,621	1,738	62,775	25,067	2,971
2013-14	1,726	1,820	67,305	26,182	3,146
2014-15	1,716	1,782	66,913	24,731	3,089
2015-16	1,764	1,925	64,913	26,050	3,125
2016-17	1,883	2,105	59,712	28,016	3,189
2017-18	1,990	2,230	68,485	31,677	3,402
2018-19	1,863	2,108	70,813	29,621	3,297
2019-20	1,846	1,929	61,733	27,974	3,097
2020-21	1,830	1,991	69,009	28,167	3,152
2021-22	1,823	2,125	76,454	29,569	3,250

Table 3.9
Province wise Number of Villages Electrified

Fiscal Year	Punjab	Khyber Pakhtunkhwa	Sindh	Balochistan	Total	Progressive Total
1981-82	925	226	297	64	1,512	12,066
1982-83	1,399	243	303	41	1,986	14,052
1983-84	1,355	240	408	182	2,185	16,237
1984-85	681	212	280	227	1,400	17,637
1985-86	1,170	363	518	281	2,332	19,969
1986-87	1,536	600	745	312	3,193	23,162
1987-88	896	304	740	176	2,116	25,278
1988-89	1,090	387	593	41	2,111	27,389
1989-90	1,769	310	720	129	2,928	30,317
1990-91	2,570	511	666	104	3,851	34,168
1991-92	2,050	582	741	157	3,530	37,698
1992-93	2,753	892	933	205	4,783	42,481
1993-94	2,853	1,080	1,118	213	5,264	47,745
1994-95	3,223	1,000	1,728	262	6,213	53,958
1995-96	2,845	600	1,288	203	4,936	58,894
1996-97	1,518	361	405	133	2,417	61,311
1997-98	859	253	176	85	1,373	62,684
1998-99	890	143	175	9	1,217	63,901
1999-00	827	270	3	0	1,100	65,001
2000-01	823	431	233	106	1,593	66,594
2001-02	738	515	327	102	1,682	68,276
2002-03	1,653	134	283	166	2,236	70,512
2003-04	4,066	1,216	1,232	675	7,189	77,701
2004-05	4,896	2,158	1,455	919	9,428	87,129
2005-06	8,484	2,266	1,082	768	12,600	99,729
2006-07	9,740	1,966	1,681	816	14,203	113,932
2007-08	6,533	1,411	1,492	1,005	10,441	124,373
2008-09	5,033	1,327	1,874	1,634	9,868	134,241
2009-10	7,554	2,438	3,215	1,855	15,062	149,303
2010-11	6,015	2,364	1,990	1,336	11,705	161,008
2011-12	5,311	759	2,464	1,734	10,268	171,276
2012-13	6,375	576	2,800	1,097	10,848	182,124
2013-14	1,015	427	887	1,041	3,370	185,494
2014-15	2,475	1,856	866	827	6,024	191,518
2015-16	3,467	2,566	1,068	1,164	8,265	199,783
2016-17	2,610	3,228	920	2,027	8,785	208,568
2017-18	8,426	4,277	1,109	2,953	16,765	225,333
2018-19	3,139	3,294	625	1,336	8,394	233,727
2019-20	2,923	2,422	384	1,403	7,132	240,859
2020-21	5,088	2,722	186	1,628	9,624	250,483
2021-22	2,301	4,721	241	1,935	9,198	259,681
Total	135,285	54,016	40,716	29,664	259,681	519,362

Table 3.10
DISCO-wise Length of Transmission Lines (km)

DISCOs	11 kV High Voltage Distribution System								
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
LESCO	26,657	27,093	27,921	28,079	28,201	29,309	30,005	30,949	31,562
GEPCO	22,216	22,468	22,604	22,718	22,861	23,234	23,723	24,659	24,996
FESCO	38,093	38,613	39,200	39,668	39,911	41,262	42,086	43,214	43,819
IESCO	23,596	24,268	24,603	24,791	24,927	25,458	25,804	26,237	26,932
MEPCO	69,453	71,102	71,971	73,430	73,132	76,057	78,309	79,837	80,962
Punjab	180,015	183,544	186,299	188,686	189,033	195,320	199,927	204,897	208,270
PESCO	33,337	33,464	34,094	34,609	34,569	36,678	36,935	37,349	37,866
TESCO	7,363	7,746	7,765	7,768	8,023	10,212	10,316	10,567	10,675
K.P. K	40,700	41,210	41,859	42,377	42,593	46,890	47,251	47,916	48,541
HESCO	26,612	26,914	27,849	28,045	27,949	28,305	28,412	28,470	28,501
SEPCO	24,277	24,197	24,419	24,614	24,765	24,618	24,784	24,888	24,921
Sindh	50,889	51,111	52,268	52,659	52,714	52,923	53,196	53,357	53,422
QESCO	33,425	34,280	35,130	35,996	36,821	39,712	39,745	40,823	41,606
Balochistan	33,425	34,280	35,130	35,996	36,821	39,712	39,745	40,823	41,606
Total	305,029	310,145	315,556	319,718	321,160	334,845	340,119	346,992	351,839
DISCOs	440 V Low Voltage Distribution System								
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2020-21
LESCO	14,730	14,806	14,815	14,845	14,900	15001	15,069	15,289	15,533
GEPCO	18,087	18,227	18,320	18,446	18,410	18541	18,659	18,457	18,494
FESCO	25,770	25,965	26,366	26,519	26,789	27154	27,284	27,510	27,622
IESCO	26,009	26,143	26,285	26,487	26,561	27041	27,300	27,624	28,160
MEPCO	46,251	46,866	47,204	48113	48040	49992	50,110	50,332	50,451
Punjab	130,847	132,007	132,990	134,410	107,912	137,729	138,421	139,211	140,259
PESCO	43,801	43,999	44,365	44,470	44,724	45121	45,204	45,371	45,627
TESCO	6,378	6,532	6,532	6,532	6,590	6278	6,283	6,285	6,290
K.P. K	50,179	50,531	50,897	51,002	51,314	51,399	51,487	51,656	51,917
HESCO	14,392	14,690	14,838	14,883	14,905	15005	15,049	15,057	15,058
SEPCO	13,471	13,336	13,426	13485	13510	13340	13,350	13,353	13,353
Sindh	27,863	28,026	28,264	28,368	28,415	28,345	28,399	28,410	28,411
QESCO	14,373	14,656	14,941	15,361	15,520	15803	16,681	17,476	17,908
Balochistan	14,373	14,656	14,941	15,361	15,520	15,803	16,681	17,476	17,908
Total	223,262	225,220	227,092	229,141	203,160	233,276	234,988	236,754	238,495

Table 3.11
Energy Generation, Sold & Per Capita Consumption

Year	Population of DISCOs (Excluding KE)	Number of Customers	Energy Purchased by CPPA-G	Energy Sale (Consumption)	Per Capita System Input Energy	Per Capita Consumption	Units Per Consumer	
	(Million)		(GWh)	(GWh)	(kWh)	(kWh)	System Input Energy (kWh)	Sale (kWh)
1981-82	87.54	3,588,250	14,378	10,288	164	118	4,007	2,867
1982-83	90.30	3,901,419	16,093	11,587	178	128	4,125	2,970
1983-84	92.96	4,231,536	17,655	12,762	190	137	4,172	3,016
1984-85	95.67	4,523,970	18,376	13,756	192	144	4,062	3,041
1985-86	98.41	4,876,787	20,656	15,504	210	158	4,236	3,179
1986-87	101.18	5,278,686	23,228	17,745	230	175	4,400	3,362
1987-88	103.99	5,779,623	27,002	20,702	260	199	4,672	3,582
1988-89	106.84	6,419,167	28,410	21,982	266	206	4,426	3,424
1989-90	109.71	6,870,679	30,809	24,121	281	220	4,484	3,511
1990-91	112.61	7,260,721	33,580	26,585	298	236	4,625	3,662
1991-92	115.54	7,736,241	37,143	29,267	321	253	4,801	3,783
1992-93	118.50	8,175,750	39,854	31,272	336	264	4,875	3,825
1993-94	121.48	8,592,042	41,289	32,131	340	264	4,805	3,740
1994-95	124.49	9,067,276	44,932	35,032	361	281	4,955	3,864
1995-96	127.51	9,481,731	47,434	36,925	372	290	5,003	3,894
1996-97	130.56	9,868,612	49,564	38,529	380	295	5,022	3,904
1997-98	124.14	10,217,072	52,192	39,422	420	318	5,108	3,858
1998-99	125.59	10,799,635	52,752	38,900	420	310	4,885	3,602
1999-00	128.55	11,584,657	54,672	40,910	425	318	4,719	3,531
2000-01	131.58	12,166,344	57,282	43,384	435	330	4,708	3,566
2001-02	134.65	12,678,022	59,545	45,204	442	336	4,697	3,566
2002-03	137.75	13,318,233	62,694	47,421	455	344	4,707	3,561
2003-04	140.89	14,091,338	67,697	51,492	480	365	4,804	3,654
2004-05	144.07	14,896,242	71,670	55,278	497	384	4,811	3,711
2005-06	147.29	15,911,161	80,404	62,405	546	424	5,053	3,922
2006-07	150.53	16,986,554	85,987	67,480	571	448	5,062	3,973
2007-08	153.82	17,955,366	84,584	66,539	550	433	4,711	3,706
2008-09	157.14	18,674,114	82,702	65,286	526	415	4,429	3,496
2009-10	160.39	19,582,224	87,115	68,878	543	429	4,449	3,517
2010-11	163.61	20,309,483	89,775	71,672	549	438	4,420	3,529
2011-12	166.83	21,046,611	88,987	71,368	533	428	4,228	3,391
2012-13	170.07	21,875,600	87,080	70,508	512	415	3,981	3,223
2013-14	173.33	22,587,870	93,777	76,543	541	442	4,152	3,389
2014-15	176.59	23,519,247	96,463	78,113	546	442	4,101	3,321
2015-16	184.64	24,516,699	100,871	76,625	546	415	4,114	3,125
2016-17	189.17	25,571,803	106,796	81,551	565	431	4,176	3,189
2017-18	193.29	27,016,545	120,082	91,902	621	475	4,445	3,402
2018-19	197.02	28,473,069	122,302	93,888	621	477	4,295	3,297
2019-20	200.82	29,957,422	122,541	92,791	610	462	4,091	3,097
2020-21	204.67	31,529,604	130,060	99,371	635	486	4,125	3,152
2021-22	208.56	33,189,796	143,031	107,866	686	517	4,309	3,250

Table 3.12
DISCO-Wise Units Purchased & Sold

DISCO	2019-20			2020-21			2021-22		
	Units Purchased	Units Sold	Losses	Units Purchased	Units Sold	Losses	Units Purchased	Units Sold	Losses
	GWh	GWh	%	GWh	GWh	%	GWh	GWh	%
LESCO	23,528	20,611	12.4	25,388	22,352	11.9	28,334	25,071	11.5
GEPCO	10,991	9,946	9.5	12,032	10,922	9.2	12,678	11,529	9.1
FESCO	14,510	13,123	9.6	15,985	14,501	9.2	17,512	15,919	9.1
IESCO	11,435	10,442	8.7	11,965	10,943	8.5	13,027	11,962	8.2
MEPCO	19,325	16,382	15.2	20,541	17,466	14.9	22,512	19,202	14.7
Punjab	79,789	70,504	11.6	85,912	76,184	11.3	94,063	83,682	11.0
PESCO	14,792	9,043	38.9	15,542	9,608	38.1	16,562	10,355	37.5
TESCO	2,001	1,803	9.9	2,227	2,013	9.6	2,284	2,072	9.3
K.P.K	16,793	10,846	35.4	17,769	11,621	34.6	18,846	12,427	34.0
HESCO	5,471	3,890	28.9	5,591	4,014	28.2	5,610	4,035	28.1
SESCO	4,253	2,710	36.3	4,291	2,776	35.3	4,490	2,890	35.6
Export (KE)	5,426	5,426	0.0	6,118	6,118	0.0	9,036	9,036	0.0
Sindh	15,150	12,026	20.6	16,000	12,908	19.3	19,136	15,961	16.5
QESCO	6,604	4,842	26.7	6,629	4,775	27.9	6,716	4,832	28.1
Balochistan	6,604	4,842	26.6	6,629	4,775	27.9	6,716	4,832	28.0
IPPs	189	189	0.00	294	294.00	0.0	376	376	0.00
Total	118,527	98,407	16.9	126,605	105,782	16.4	139,137	117,278	15.7

Table 3.13
Number of Pending Applications

Year	Domestic	Commercial	Industrial	Agriculture	Others	Total
2009-10	150,996	14,481	3,065	28,487	206	197,235
2010-11	207,647	17,337	3,235	28,430	331	256,980
2011-12	199,273	18,549	3,778	18,555	305	240,460
2012-13	163,432	15,418	2,942	8,473	251	190,516
2013-14	310,878	30,276	3,618	8,592	184	353,548
2014-15	248,467	25,829	3,964	3,826	256	282,342
2015-16	253,929	25,634	3,474	2,912	131	286,080
2016-17	358,178	33,556	4,199	4,295	150	400,378
2017-18	252,932	21,671	3,806	7,540	205	286,154
2018-19	337,444	29,023	3,819	11,489	135	381,910
2019-20	320,535	18,436	2,972	7,969	209	350,121
2020-21	450,805	24,312	3,191	7,440	566	486,314
2021-22	318,680	20,796	2,645	5,547	868	348,536
Current Status of Pending Application						
As on 30th June 2022						
DISCO	Domestic	Commercial	Industrial	Agriculture	Others	Total
LESCO	43,483	3,066	738	1,310	5	48,602
GEPCO	31,364	2,471	700	505	0	35,040
FESCO	91,411	4,458	280	579	152	96,880
IESCO	34,600	3,442	52	44	63	38,201
MEPCO	107,928	5,906	587	2,937	326	117,684
PUNJAB	308,786	19,343	2,357	5,375	546	336,407
PESCO	6,257	736	75	49	17	7,134
TESCO	12	4	23	10	8	57
K.P.K	6,269	740	98	59	25	7,191
HESCO	1,931	265	138	49	65	2,448
SEPCO	907	153	47	64	21	1,192
SINDH	2,838	418	185	113	86	3,640
QESCO	787	295	5	0	211	1,298
Balochistan	787	295	5	0	211	1,298
TOTAL	318,680	20,796	2,645	5,547	868	348,536

Table 3.14
New Connections Installed

Year	Domestic	Commercial	Industrial	Agriculture	Others	Total
2009-10	546,598	52,371	7,978	9,756	313	617,016
2010-11	666,896	64,168	9,920	11,036	406	752,426
2011-12	641,685	58,774	9,395	9,914	399	720,167
2012-13	710,834	64,284	9,056	12,369	373	796,916
2013-14	649,108	76,707	7,770	8,400	289	742,274
2014-15	817,581	80,482	8,645	6,649	219	913,576
2015-16	926,301	90,394	9,685	4,191	282	1,030,853
2016-17	1,105,705	105,727	11,471	4,866	266	1,228,035
2017-18	1,338,308	115,284	10,808	7,408	279	1,472,087
2018-19	1,310,132	107,844	8,796	13,365	262	1,440,399
2019-20	1,301,967	92,132	6,597	17,652	418	1,418,766
2020-21	1,460,025	106,560	9,655	14,024	816	1,591,080
2021-22	1,462,005	103,131	9,797	10,221	944	1,586,098
Current Status of New Connection installed As on 30th June 2022						
DISCO	Domestic	Commercial	Industrial	Agriculture	Others	Total
LESCO	333,066	20,801	1,932	2,011	8	357,818
GEPCO	209,829	15,579	4,323	2,272	5	232,008
FESCO	176,782	11,243	1,109	2,016	237	191,387
IESCO	186,454	17,730	451	153	163	204,951
MEPCO	362,088	17,689	1,118	3,601	316	384,812
PUNJAB	1,268,219	83,042	8,933	10,053	729	1,370,976
PESCO	158,114	12,863	466	94	70	171,607
TESCO	31	301	46	12	3	393
K.P.K	158,145	13,164	512	106	73	172,000
HESCO	17,878	2,163	201	58	18	20,318
SEPCO	6,664	1,163	138	4	11	7,980
SINDH	24,542	3,326	339	62	29	28,298
QESCO	11,099	3,599	13	0	113	14,824
Balochistan	11,099	3,599	13	0	113	14,824
TOTAL	1,462,005	103,131	9,797	10,221	944	1,586,098

Statistics of K- Electric



	2021-22
■ Number of Consumers	3,405,332
■ Peak Demand Recorded	3,670 MW
■ Installed Generation Capacity	2,974 MW
■ System Losses	15.35 %
■ Energy Consumption	16,763 GWh

Table 4.1
K- Electric Energy Data

Year	Generation Capacity (MW)				System Energy (GWh)		Peak Demand	System Losses	
	K-E Own	IPPs	Nuclear	Total	Total	Imports	(MW)	(GWh)	(%)
1982-83	673				3,001		618		
1983-84	928		137	1,065	3,556		732	880	24.76
1984-85	1,138		137	1,275	4,528		797	1,007	22.23
1985-86	1,138		137	1,275	4,582		872	1,002	21.87
1986-87	1,108		137	1,245	4,772		945	1,126	23.59
1987-88	1,108		137	1,245	5,527		965	1,298	23.48
1988-89	1,108		137	1,245	5,721		1,060	1,386	24.23
1989-90	1,318		137	1,455	6,218		1,123	1,593	25.62
1990-91	1,723		137	1,860	6,292		1,220	1,323	21.03
1991-92	1,738		137	1,875	7,419		1,273	1,927	25.97
1992-93	1,738		137	1,875	7,889		1,338	2,009	25.47
1993-94	1,738		137	1,875	8,632	535	1,422	2,545	29.48
1994-95	1,738		137	1,875	8,760	1,462	1,445	3,128	35.71
1995-96	1,738		137	1,875	9,386	1,329	1,513	3,298	35.14
1996-97	1,525		137	1,662	9,327	1,869	1,529	3,696	39.63
1997-98	1,756	262	137	2,155	7,318	3,030	1,729	3,007	41.09
1998-99	1,756	262	137	2,155	10,620	3,701	1,730	4,858	45.74
1999-00	1,756	262	137	2,155	11,446	4,007	1,855	5,235	45.74
2000-01	1,756	262	137	2,155	11,677	3,688	1,860	5,341	45.74
2001-02	1,756	262	137	2,155	12,115	3,406	1,885	5,541	45.74
2002-03	1,756	262	137	2,155	12,616	3,809	1,885	5,979	47.39
2003-04	1,756	262	137	2,155	13,392	3,664	2,073	5,983	44.67
2004-05	1,756	262	137	2,155	13,593	4,289	2,197	5,085	37.41
2005-06	1,756	262	137	2,155	14,500	5,370	2,223	4,992	34.43
2006-07	1,756	262	137	2,155	14,238	6,707	2,354	4,874	34.23
2007-08	1,690	512	137	2,339	15,189	6,527	2,443	5,182	34.12
2008-09	1,955	512	137	2,604	15,268	7,006	2,462	5,474	35.85
2009-10	1,955	273	137	2,365	15,806	7,842	2,562	5,515	34.89
2010-11	1,821	223	137	2,181	15,431	7,606	2,565	5,361	34.74
2011-12	2,381	285	137	2,803	15,259	7,230	2,596	4,982	32.65
2012-13	2,341	289	137	2,767	15,823	7,257	2,778	4,881	30.85
2013-14	2,422	228	137	2,787	15,991	7,282	2,929	4,538	28.38
2014-15	1,875	352	75	2,302	16,815	7,497	3,056	5,258	31.27
2015-16	2,295	349	75	2,719	17,304	6,981	3,195	5,122	29.60
2016-17	2,295	339	75	2,709	17,353	7,206	3,270	5,090	29.33
2017-18	2,267	443	137	2,847	18,200	7,862	3,527	3,558	34.40
2018-19	2,295	489	70	2,854	18,495	7,768	3,530	3,533	19.10
2019-20	2,295	547	70	2,912	18,510	8,152	3,604	3,509	19.70
2020-21	2,084	559	70	2,713	20,239	9,301	3,604	3,418	17.54
2021-22	2,345	559	70	2,974	19,802	9,037	3,670	3,039	15.35

Table 4.2
Number of Consumers by Economic Group

Fiscal Year	Domestic	Commercial	Industrial	Agriculture	Public Lighting	Bulk Supply & Others	Total
1979-80	358,758	64,143	12,585	630	51	396	436,563
1980-81	403,307	102,037	13,021	637	50	396	519,448
1981-82	442,230	112,059	13,543	626	51	396	568,905
1982-83	472,698	122,322	14,335	742	53	396	610,546
1983-84	502,563	130,985	14,986	783	53	396	649,766
1984-85	541,671	142,575	15,964	792	53	396	701,451
1985-86	586,918	160,016	16,835	931	53	398	765,151
1986-87	627,154	176,865	17,927	972	56	402	823,376
1987-88	664,730	193,912	19,185	1,001	56	402	879,286
1988-89	699,564	205,199	20,180	1,051	60	402	926,456
1989-90	745,375	219,052	20,731	1,066	68	406	986,698
1990-91	794,998	236,342	21,825	1,062	70	407	1,054,704
1991-92	834,177	250,196	22,849	1,156	78	407	1,108,863
1992-93	875,827	263,807	24,404	1,212	80	908	1,166,238
1993-94	948,107	282,524	26,268	1,253	80	931	1,259,163
1994-95	948,107	282,524	26,268	1,253	80	931	1,259,163
1995-96	972,105	286,154	26,221	1,251	137	666	1,286,534
1996-97	1,010,123	297,544	27,272	1,276	153	965	1,337,333
1997-98	1,046,423	311,284	28,046	1,341	153	976	1,388,223
1998-99	1,093,765	323,135	29,041	1,398	152	1,014	1,448,505
1999-00	1,229,532	346,648	29,777	1,548	159	1,055	1,608,719
2000-01	1,269,912	366,611	30,339	1,594	157	1,107	1,669,720
2001-02	1,294,002	355,080	30,623	1,650	157	1,137	1,682,649
2002-03	1,306,748	355,581	20,071	1,526	158	959	1,685,043
2003-04	1,349,375	377,235	20,112	1,589	163	999	1,749,473
2004-05	1,398,576	395,719	21,220	1,775	123	823	1,818,236
2005-06	1,447,728	409,452	21,871	1,893	138	887	1,881,969
2006-07	1,494,669	425,001	21,920	2,007	69	1,408	1,945,074
2007-08	1,518,644	433,416	21,453	2,038	140	1,415	1,977,106
2008-09	1,531,971	437,463	20,751	2,073	112	1,376	1,993,746
2009-10	1,582,426	445,442	20,703	2,157	71	1,484	2,052,283
2010-11	1,632,604	452,667	20,595	2,233	57	1,467	2,109,623
2011-12	1,659,766	456,537	20,537	2,536	67	426	2,139,869
2012-13	1,660,768	452,329	20,462	2,616	66	368	2,136,609
2013-14	1,650,034	438,150	20,464	2,410	74	204	2,111,336
2014-15	1,694,779	438,683	20,609	2,484	77	199	2,156,831
2015-16	1,758,467	444,687	20,625	2,623	72	203	2,226,677
2016-17	1,945,091	456,087	20,852	2,615	74	201	2,424,920
2017-18	2,096,451	463,670	20,647	2,398	74	195	2,583,435
2018-19	2,298,647	474,598	20,840	2,329	93	11,563	2,808,070
2019-20	2,447,129	470,777	22,553	2,271	90	16,279	2,959,099
2020-21	2,651,527	490,652	23,244	2,164	88	17,657	3,185,332
2021-22	2,851,946	509,334	23,706	2,093	180	18,073	3,405,332

Table 4.3
Consumption of Energy (GWh) by Economic Group

Year	Domestic	Commercial	Industrial	Agricultural	Public Lighting	Bulk Supply	Others	Total
1979-80	448	206	902	11	29	43		1,639
1980-81	748	416	932	9	18	11		2,134
1981-82	881	460	1,042	10	28	63		2,485
1982-83	929	501	1,036	13	30	70		2,579
1983-84	1,096	559	1,190	13	28	129		3,015
1984-85	1,204	579	1,256	13	31	770		3,852
1985-86	1,361	651	1,402	20	41	569		4,043
1986-87	1,482	723	1,560	19	36	310		4,130
1987-88	1,649	816	1,718	21	51	303		4,558
1988-89	1,743	853	1,863	22	60	225		4,765
1989-90	1,755	858	1,973	23	71	394		5,074
1990-91	1,782	914	2,002	24	84	163		4,969
1991-92	1,768	407	2,075	25	82	1,136		5,492
1992-93	1,985	419	2,118	26	92	1,240		5,880
1993-94	2,170	482	2,096	29	82	1,228		6,087
1994-95	2,135	451	1,924	32	73	1,016		5,632
1995-96	2,324	522	1,854	38	77	1,206		6,021
1996-97	2,145	484	1,863	67	82	998		5,640
1997-98	2,357	566	2,059	48	81	1,273		6,385
1998-99	2,311	556	2,254	43	66	901		6,131
1999-00	2,457	541	2,431	28	89	885		6,430
2000-01	2,683	653	2,604	28	66	889		6,923
2001-02	2,623	665	2,504	26	62	839		6,718
2002-03	2,726	702	2,719	30	78	720		6,976
2003-04	3,135	804	2,890	44	70	874		7,818
2004-05	3,508	888	3,023	66	78	853		8,416
2005-06	3,760	962	3,206	76	74	745	237	9,060
2006-07	3,864	986	3,544	79	65	537	292	9,367
2007-08	4,263	1,153	3,398	95	74	913	156	10,052
2008-09	3,989	1,004	3,226	100	83	862	132	9,396
2009-10	4,168	1,091	3,387	104	87	920	148	9,905
2010-11	4,257	1,043	3,447	125	82	955	162	10,071
2011-12	4,564	1,128	3,342	134	118	806	186	10,277
2012-13	5,083	1,507	3,445	149	111	473	174	10,942
2013-14	5,488	1,507	3,568	160	106	427	197	11,453
2014-15	6,161	1,589	3,843	166	110	411	15	12,295
2015-16	6,596	1,685	3,830	163	163	412	16	12,865
2016-17	6,643	1,655	3,885	159	187	433	19	12,981
2017-18	7,173	1,755	4,124	151	157	471	29	13,860
2018-19	7,299	1,781	4,402	134	160	477	64	14,318
2019-20	7,489	1,615	4,158	116	112	468	319	14,277
2020-21	8,041	1,709	5,221	122	98	454	424	16,069
2021-22	8,005	1,846	5,843	111	64	468	427	16,763

Table 4.4
Average Sale Price – (Rs. /kWh) by Economic Group

Year	Domestic	Commercial	Industrial	Agricultural	Public Lighting	Bulk Supply & Others	Total
1979-80	0.34	0.75	0.55	0.27	0.30	0.19	0.51
1980-81	0.39	0.96	0.69	0.46	0.79	0.28	0.63
1981-82	0.44	1.21	0.96	0.74	0.96	0.42	0.78
1982-83	0.44	1.48	1.27	0.68	1.32	0.44	0.99
1983-84	0.45	1.47	1.25	0.67	1.59	0.46	0.97
1984-85	0.44	1.45	1.24	0.68	1.52	0.68	0.91
1985-86	0.48	1.48	1.22	0.65	1.63	0.72	0.94
1986-87	0.48	1.42	1.18	0.64	1.36	0.66	0.93
1987-88	0.57	1.58	1.36	0.59	1.05	0.73	1.05
1988-89	0.73	2.19	1.36	0.71	1.02	1.03	1.14
1989-90	0.82	2.46	1.50	0.80	1.08	1.07	1.25
1990-91	0.92	2.82	1.69	0.95	1.27	1.17	1.44
1991-92	1.00	3.12	1.88	1.05	1.38	1.28	1.56
1992-93	1.01	3.09	1.88	1.06	1.22	1.28	1.66
1993-94	1.33	3.56	2.30	1.25	1.39	1.51	1.90
1994-95	1.36	4.21	2.78	1.36	1.97	2.04	2.21
1995-96	1.25	3.66	2.88	1.13	1.86	1.70	2.06
1996-97	1.78	5.10	3.42	0.95	2.79	2.86	2.80
1997-98	2.45	6.22	3.82	1.59	3.65	3.59	3.42
1998-99	2.87	6.44	4.23	2.05	4.32	3.51	3.73
1999-00	2.97	7.15	4.26	2.73	5.39	3.97	3.98
2000-01	3.13	7.36	4.35	3.12	6.46	4.65	4.06
2001-02	3.44	7.44	4.52	3.47	5.41	5.43	4.45
2002-03	3.58	7.47	4.69	3.76	7.03	5.69	4.60
2003-04	3.76	7.60	4.95	2.54	6.98	6.08	4.78
2004-05	3.62	7.21	4.76	1.73	6.74	5.77	4.59
2005-06	3.66	7.21	4.72	1.37	6.75	5.70	4.59
2006-07	3.81	7.52	4.77	1.26	6.99	5.98	4.74
2007-08	4.22	7.79	5.14	1.24	7.17	5.38	5.14
2008-09	4.94	9.74	6.31	1.33	7.35	7.82	6.18
2009-10	5.79	11.07	7.11	1.15	12.75	8.70	7.11
2010-11	6.97	13.10	8.21	0.37	12.16	9.87	8.29
2011-12	7.65	13.24	10.29	0.73	12.33	10.22	9.01
2012-13	8.93	16.82	11.78	1.78	12.12	13.33	11.02
2013-14	8.95	17.22	14.84	8.00	12.12	12.57	12.15
2014-15	8.81	17.59	14.75	10.74	13.33	11.55	12.07
2015-16	11.59	17.86	13.49	1.83	14.79	11.97	12.97
2016-17	11.99	17.88	12.02	6.19	14.92	15.30	12.84
2017-18	11.96	17.98	11.69	5.63	15.01	15.10	12.72
2018-19	11.80	18.07	12.18	4.64	15.46	15.47	12.83
2019-20	15.53	27.26	19.30	9.18	24.70	23.09	18.38
2020-21	16.60	28.98	20.64	11.19	24.48	24.33	19.66
2021-22	18.40	34.20	25.70	12.50	33.40	29.35	23.30

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