

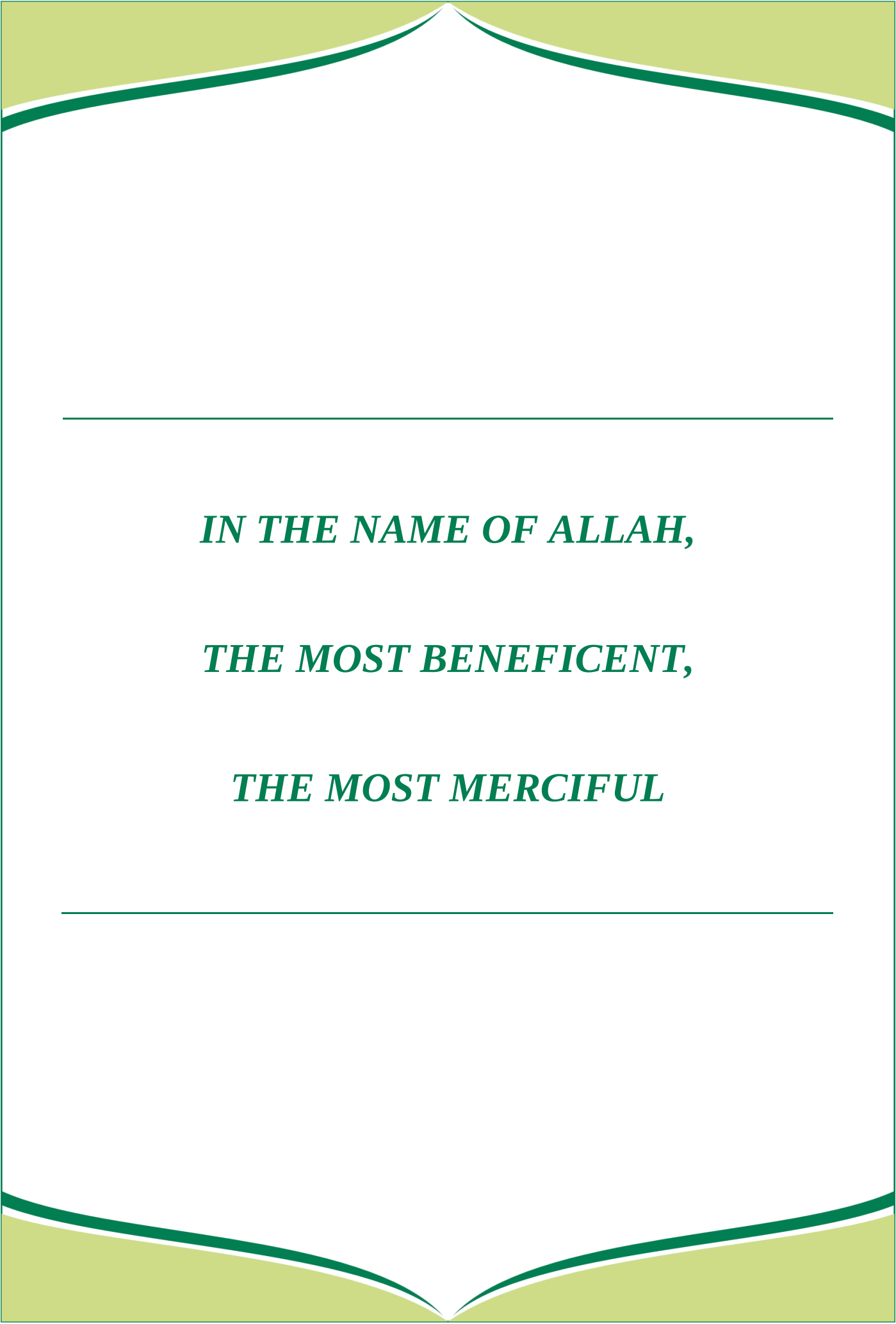


YEAR BOOK

2021-2022



GOVERNMENT OF PAKISTAN
POWER DIVISION (MINISTRY OF ENERGY)
ISLAMABAD
www.power.gov.pk



IN THE NAME OF ALLAH,

THE MOST BENEFICENT,

THE MOST MERCIFUL

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PREFACE

The Year Book for the Year 2021-22 has been prepared in accordance with rule 25 (3) of the Rules of Business, 1973, which stipulates that at the beginning of each Financial Year, each Division shall, for the information of the Cabinet and General Public prepare a permanent record in the form of Year Book which shall contain:

- The details of its activities, achievements and progress during the preceding financial year giving only the unclassified information which can be used for reference purposes;
- The programme of activities and targets set out for itself during the preceding financial year and the extent to which they have been realized; and
- The relevant statistics properly tabulated.

Keeping in view, the above requirement of the Rules of Business, Ministry of Energy (Power Division) has given comprehensive and extensive details of its activities and achievements in the Year Book.

In the Year Book, the reader will find, in detail, the achievements of Ministry of Energy (Power Division) with respect to Power Generation, Transmission and its Distribution to end consumers in the preceding year.

It is hoped that Government officials, researchers and general public find it a valuable and substantial document relating to Ministry of Energy (Power Division) and Power Sector of Pakistan.

INTRODUCTION

Power Division (Ministry of Energy) was formed in August, 2017 after splitting the Ministry of Water and Power. The Water Division was merged with newly created Ministry of Water Resources and the Power Division was moved under newly created Ministry of Energy. Ministry of Energy consists of two Divisions namely Power Division and Petroleum Division

Power Division (Ministry of Energy) has been mainly dealing with the subject of electricity, which include generation, transmission and distribution and policy matters pertaining to these three functions. Right now, there are 22 public sector companies and 02 statutory bodies working under the Power Division. The power policies, power finance, operational matters pertaining to the above three functions and administrative matters of 24 Entities/ organizations are being dealt by the Power Finance, Entities & DISCOs, Transmission, Tariff & Subsidy and Development Wings within the Power Division. The matters pertaining to logistic support, human resource planning, law, Parliamentary business, coordination, budgeting, finance & accounts and audit are being dealt in two other wings namely Administration wing and Finance & Accounts wing.

Power Division (Ministry of Energy) has been dealing with comprehensive plans to fulfill the energy needs of the country. To enhance the generation of electricity, special focus is being given to alternative/ renewable energy, thermal and coal power projects to make Pakistan energy-sufficient country in the days to come besides harnessing the indigenous hydel generation resources. This strategy will set Pakistan on a trajectory of rapid economic growth and social development. Simultaneously, it will address the key challenges of the power sector in order to provide much needed relief to the citizens of Pakistan. At the same time, it is essential to mention that the IPPs are contributing a great deal in fulfilling the electricity needs of the country. Further, in order to encourage higher Power consumption, the Government has shown its willingness to lay emphasize on efficient supply of electricity for maintaining /reviving economic activities in the country.

MESSAGE FROM THE MINISTER FOR POWER DIVISION



The Power Sector of a country has much importance in the Economic development of the country that is why Power Sector under the present Government has taken a number of initiatives in order to reform the sector besides making it self-sustaining. The initiatives include both administrative and technical measures pertaining to system augmentation and upgradation. Main emphasis of these steps is to make the electricity in the country affordable and available for all.

The Government is in pursuit of overcoming energy crisis both in short and long term. Similarly, Government is in the effort to end the gap between demand and supply of electricity and bring down the high prices of Energy. For this purpose Ministry of Energy (Power Division) has given preference to renewable energy sources.

In this regard, until now the government has operationalized twenty four (36) Wind Power projects of 1835 MW, Six (07) Solar Projects of 530 MW and eight (08) sugar mills based bagasse co-generation projects of 259.1 MW. To add more, Twelve (12) wind projects of 610 MW, four (01) solar power projects of 250 MW cumulative capacity have been facilitated to achieve COD. Power generation projects which is comprehensively dominated by Renewable Hydro and Thar Coal of 10648 MW are in pipeline to provide relief to general public. Government has taken several supportive steps for deployment of net metering systems. A total number of 16,781 Net Metering based systems of 289.45 MW were installed, the total number of Net Metering based installations reached upto 29,872 with the capacity of 499.27 MW by June, 2022. Online connection application system has been introduced to enable general public to submit application for new connection through internet

I hope that at the completion of under- construction projects in energy sector, the present government will not only end the gap between demand and supply of electricity but will also bring down the high prices of energy to affordable level.

(Khurram Dastagir Khan)

Minister for Power Division

**MESSAGE FROM THE MINISTER OF STATE FOR POWER
DIVISION**



The energy crisis has myriad aspects. One of them is the circular debt. The circular debt mainly arises out of line losses and recovery losses due to electricity theft. Owing to this reason, the distribution companies are not in a position to pay dues to the IPPS and their GENCOs.

The Government launched a strategy to curb the gap between the billing and actual payments. The strategy has many aspects. On the one hand, the Government has started action against individuals and registered FIRs who were involved in Kunda connections. As per latest data, a total of 28,608 FIRs have been registered in the FY 2021-22 while 698 persons involved in theft have been arrested. An amount to the tune of Rs. 1742 million has been recovered from charged detection bills in this anti-theft campaign. On the other hand, Government has conditioned supply of electricity to a feeder with the percentage of losses. The more losses, the more load shedding on that particular feeder.

So the Government is trying it's hard to produce more electricity to achieve self sufficiency in this sector. But at the same time Government desires to bring down losses to the minimum so that the Government can invest in energy projects instead of paying only for the losses.

I hope that the Government will not only be able to achieve the desired results in the generation capacity of the sector but will also develop vibrant administration for curbing the losses and saving the valuable money of tax payers paid to cover the rising losses.

(Muhammad Hashim Notezai)

Minister of State for Power Division

**MESSAGE FROM THE FEDERAL SECRETARY FOR POWER
DIVISION**



The Year Book 2021-22 gives the information about the targets, achievements, and future goals of the Government. It is a great privilege for me to present the Year Book 2021-22 with the resolve that we will be able to eradicate the menace of energy crisis.

In the modern world, energy plays a central role in the progress and prosperity of a nation. In this regard, Ministry of Energy, Power Division has left no stone unturned to ensure energy security for the people of Pakistan.

The Ministry of Energy, Power Division strives to develop energy from local and alternate sources like Hydel, Coal, LNG, Wind and Solar, etc. so that the high prices of electricity can be brought down to the affordable level. The present Government has set a target to increase the renewable energy share to 20% by 2025 and 30% by 2030 as per ARE Policy, 2020. This initiative will bring down high prices of electricity and will ensure sustainable use of resources to benefit posterity of Pakistan.

For the realization of major paradigm shift from the conventional power resources to alternative energy sources, various projects have been launched. The Ministry is vigorously pursuing the targets and goals set and envisaged by the Prime Minister of Pakistan.

The book gives an overview of the activities, achievements, progress and future goals of the Power Division and its attached Organizations/ Companies working under its administrative control for the Financial Year 2021-22.

I hope that this Year Book will be a source of information in respect of Power Sector of Pakistan and will serve as a beneficial reference document.

(Rashid Mahmood Langrial)

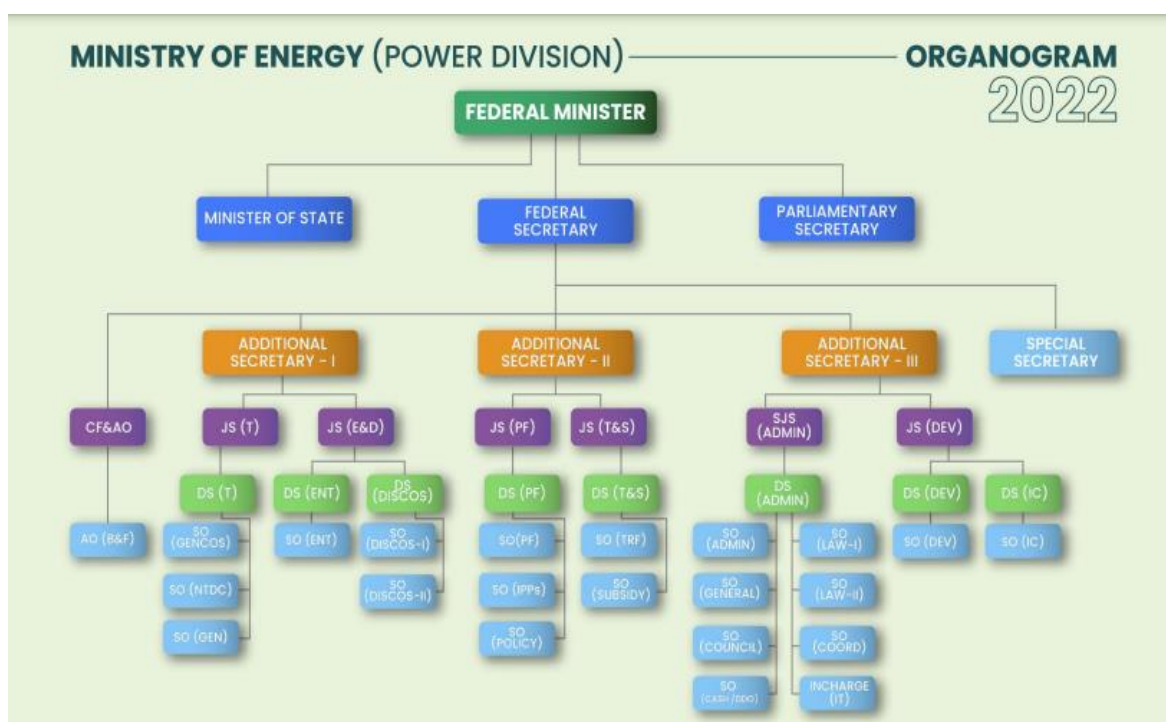
Secretary for Power Division

MANDATE AS GIVEN IN THE RULES OF BUSINESS, 1973

In terms of Rule 3(3) and 31B of schedule-II of the Rules of Business, 1973, the following business of Government is assigned to the Power Division: -

1. Matters relating to development of power resources of the country.
2. Matters relating to electric utilities.
3. Liaison with international engineering organizations in power sector.
4. Federal agencies and institutions for promotion of special studies in power sector.
 - (a) Electricity;
 - (b) Karachi Electric Supply Corporation and Pakistan Electric Agencies Limited.
5. National Engineering (Services) Pakistan Limited.
6. Private Power and Infrastructure Board.
7. Administrative Control of Alternative Energy Development Board.
8. Federal Government functions in regard to National Electric Power Regulatory Authority.
9. National Energy Efficiency and Conservation Authority.

ORGANOGRAM & STRUCTURE OF POWER DIVISION



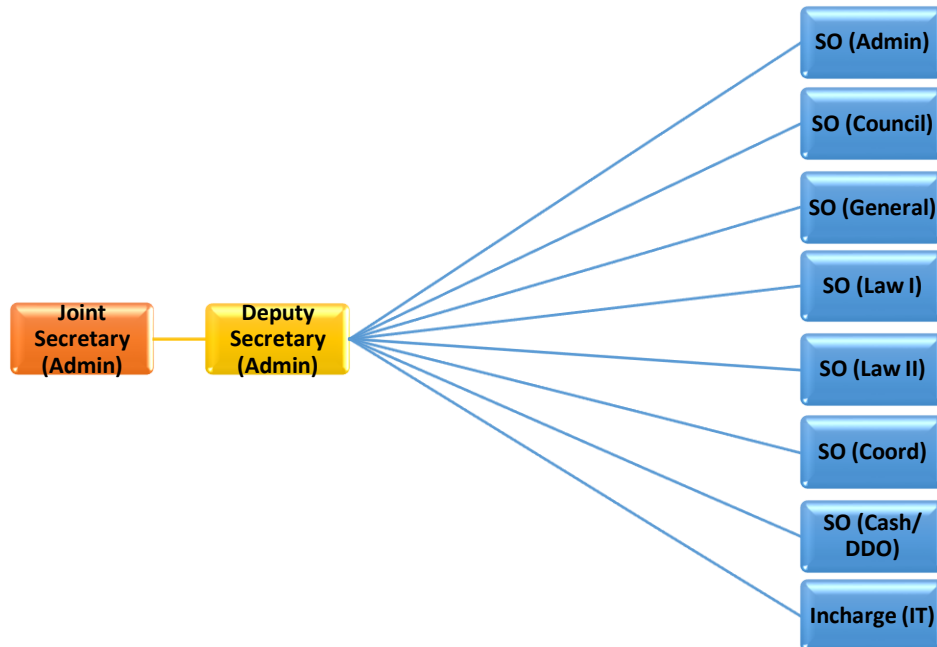
STRUCTURE OF POWER DIVISION

Power Division is headed by Secretary Power Division who is assisted by a Special Secretary and three Additional Secretaries. The functions of Power Division have been divided into six Wings. Each Wing is headed by the Joint Secretary, details are given below:

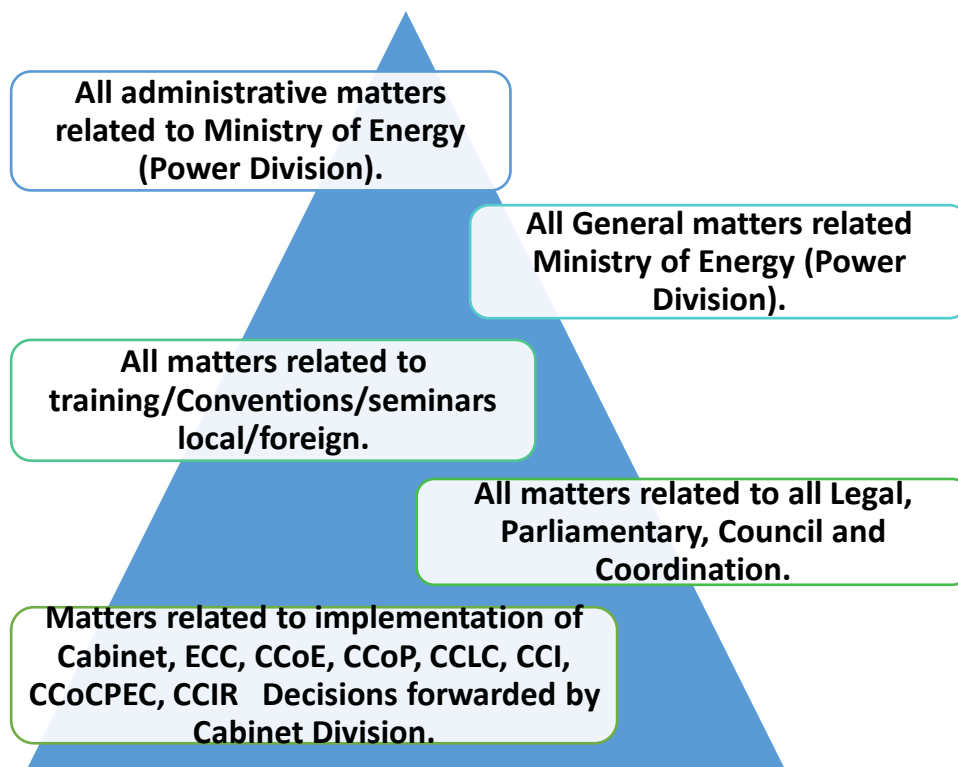
1. Administration & Council Wing (A&C Wing).
2. Power Finance Wing (PF Wing).
3. Transmission Wing (T Wing).
4. Entities and DISCOs Wing (E & D Wing).
5. Development Wing (Dev Wing).
6. Tariff & Subsidy Wing (T & S Wing).

1. ADMINISTRATION & COUNCIL WING (A & C WING)

Administration & Council Wing is headed by Joint Secretary (Admin & Council) who is assisted by one Deputy Secretary, seven Section Officers and one IT Incharge.

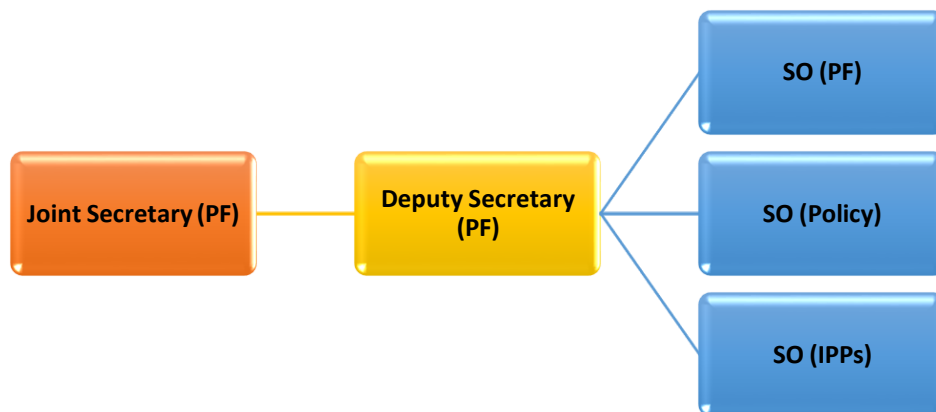


Functions of Admin Wing

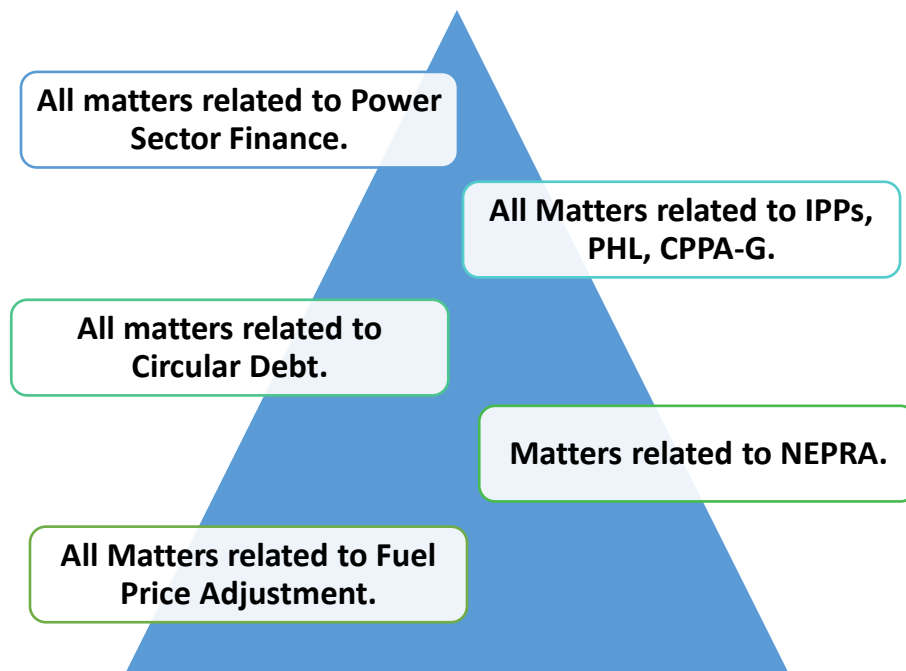


2. POWER FINANCE WING (PF WING)

Power Finance Wing is headed by Joint Secretary (PF) who is assisted by one Deputy Secretary and three Section Officers.

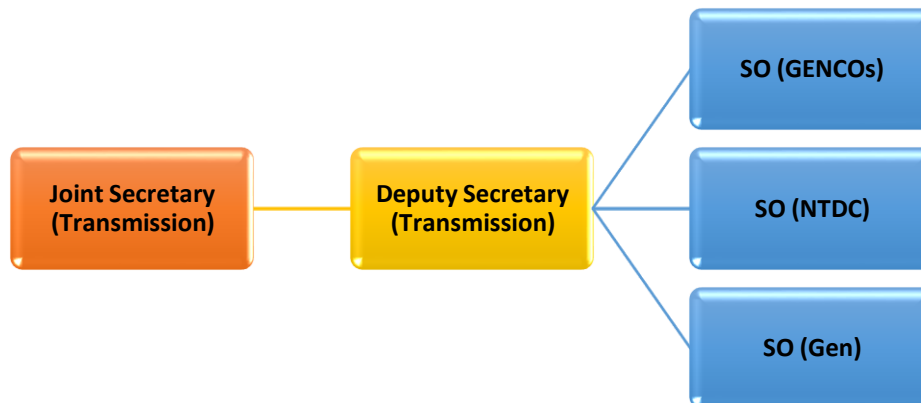


Functions of Power Finance Wing

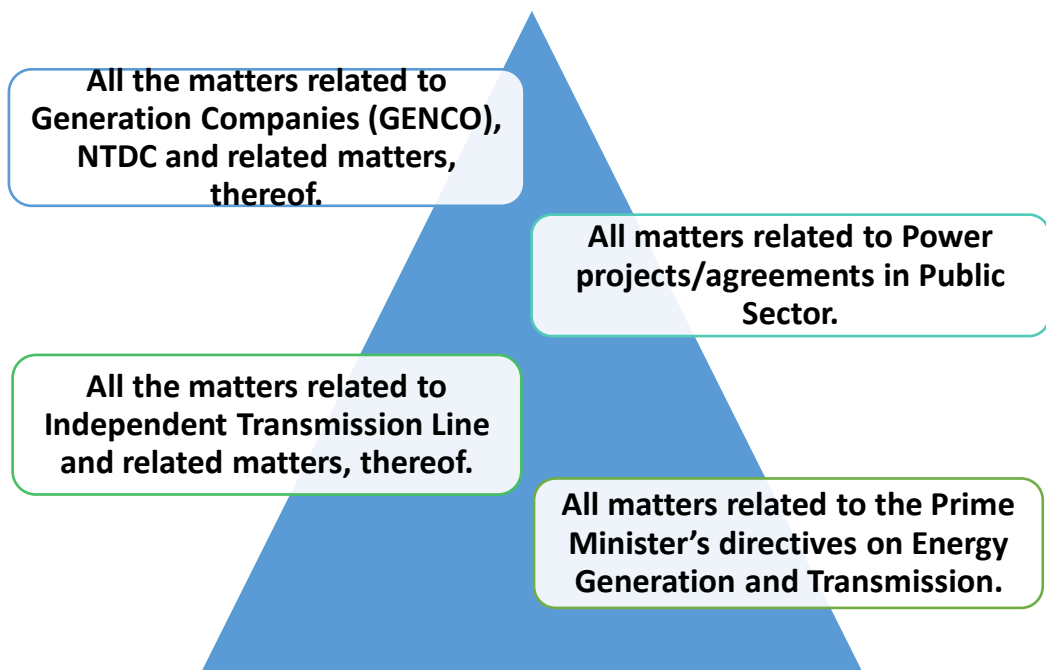


3. TRANSMISSION WING (T WING)

Transmission Wing is headed by Joint Secretary (Transmission) who is assisted by one Deputy Secretary and three Section Officers.

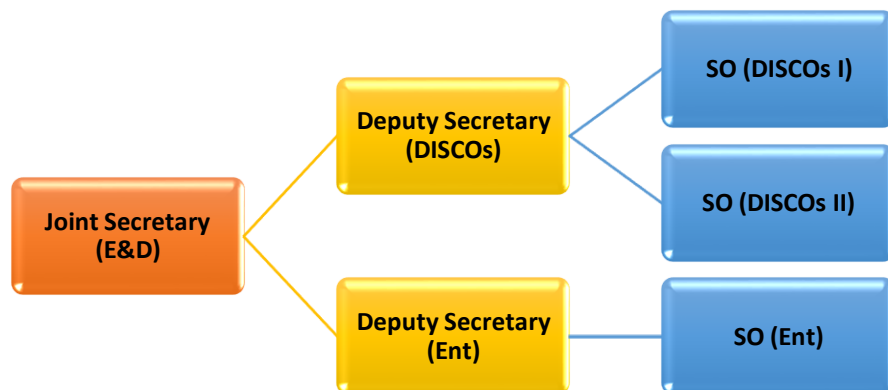


Functions of Transmission Wing

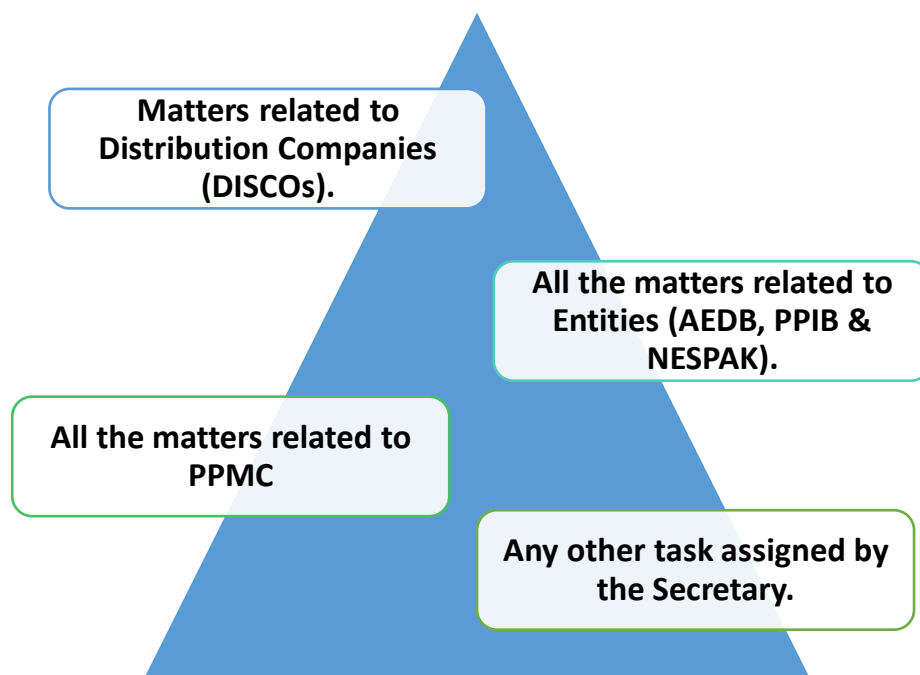


4. ENTITIES AND DISCOs WING (E & D WING)

Entities and DISCOs Wing is headed by Joint Secretary (E&D) who is assisted by two Deputy Secretaries and three Section Officers.



Functions of Entities and DISCOs Wing

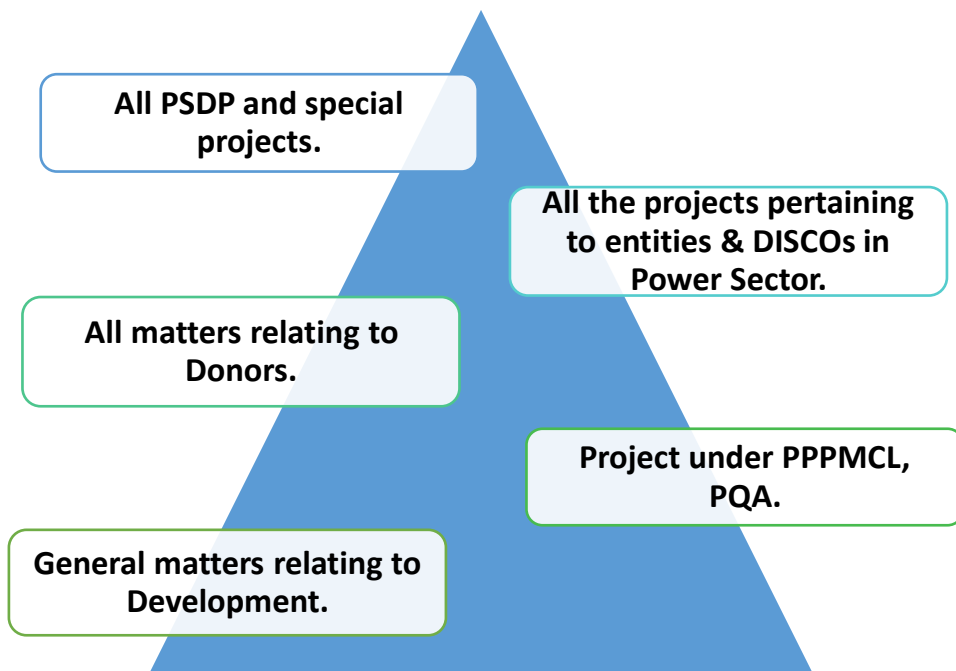


5. DEVELOPMENT WING (DEV WING)

Development Wing is headed by Joint Secretary (Development) who is assisted by one Deputy Secretary and two Section Officers.

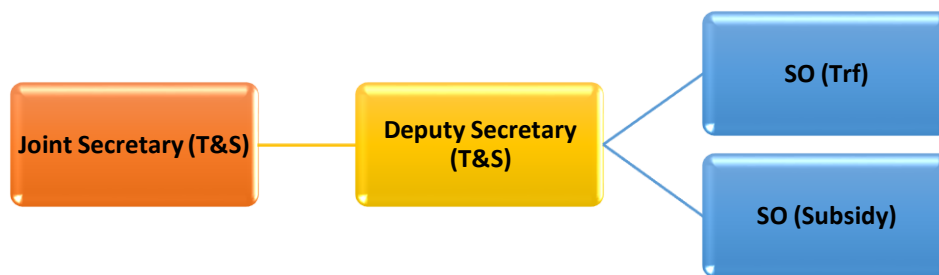


Functions of Development Wing

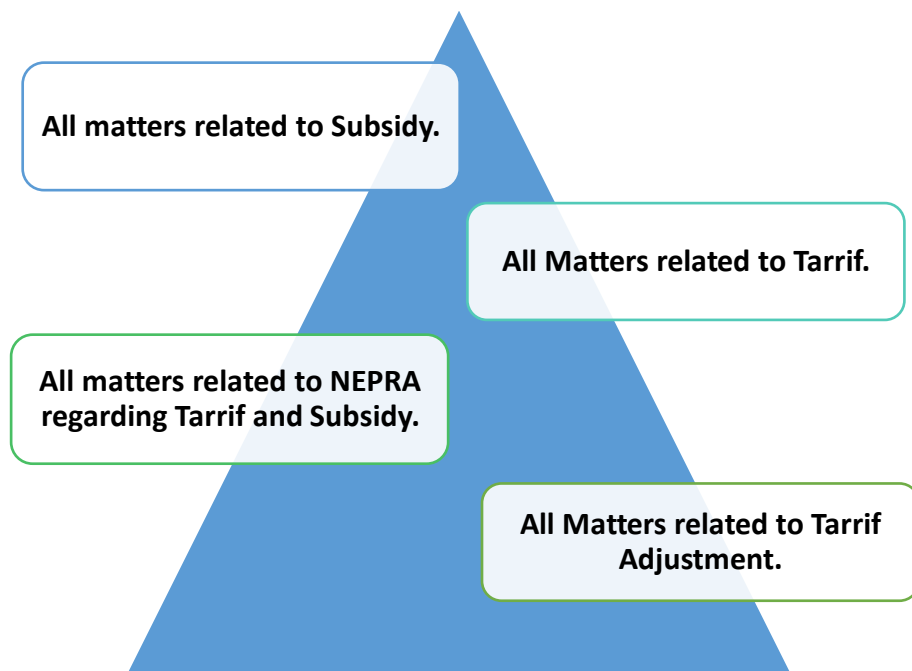


6. TARIFF & SUBSIDY WING (T & S WING)

Tariff and Subsidy Wing is headed by Joint Secretary (T&S) who is assisted by one Deputy Secretary (T&S) and two Section Officers.



Functions of Tariff and Subsidy Wing



PERFORMANCE OF POWER DIVISION

A brief discription of the performace of Power Division during the Financial Year 2021-22 is given below:

a. Decisions of Cabinet:

Detail of cases submitted to the Cabinet and its Sub-Committees are as under:

Sr / No	Decisions	No of Decisions implemented
1	Cabinet Decision	26
2	Economic Coordination Committee (ECC)	43
3	Cabinet Committee on Energy (CCoE)	39
4	Cabinet Committee on Privatization (CCoP)	1
5	Council of Common Interest (CCI)	1
6	Cabinet Committee on Instiitucional Reforms (CCIR)	3
7	Cabinet Committee for disposal of Legislative Cases (CCLC)	3
8	Cabinet Committee on China Pakistan Economic Corridor (CCoCPEC)	3
TOTAL		119

b. Court Cases:

Detail of Court Cases disposed and processed during FY 2021-22 are given below:

Sr / No	Court / Departments	No of Cases Disposed / Processed
1	Supreme Court of Pakistan	8
2	Islamabad High Court	179
3	Lahore High Court	754
4	Sindh High Court	200
5	Peshawar High Court	280
6	Balochistan High Court	64
7	Other Courts / Tribunals	21

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8	Pakistan Information Commission (PIC) Islamabad	60
9	Ministry of Law and Justice Division for nomination of Advocates on Panel	250
10	NAB	02
11	FIA	01
12	Wafaqi Mohtasib, Islamabad	07
TOTAL		1826

c. Parliamentary Business:

In addition to its usual business, Power Division also dealt with the following Parliamentary Business:

Sr / No	Business	Nos	
		Senate	National Assembly
1	Standing Committee Meetings	24	30
2	Questions / Answers	140	205
3	Motions	10	20
4	Resolutions	05	10
5	Calling Attention Notice	07	13
6	Budget Cut Motions	-	133
7	Bills	04	05

d. Administrative/HR Matters:

Sr/No	Detail of Cases	No of Cases
1	Employees appointed under direct recruitment	44
2	Employee deputed for seasonal Hajj	1
3	Contractual Employees regularized under (P.M. Package)	2
4	Posts of APS advertised for recruitment through in FPSC	7
5	Cases of encashment/retirement of officers processed	2
6	APSs (BS-16) promoted as Private Secretary (BS-17)	2
7	Assistants (BS-16/15) promoted as Superintendent (BS-16)	2
8	Next time pay scale awarded to Staff Car Drivers and 1 Dispatch Rider	5

e. Miscellaneous Activities:

Sr/No	Detail of Cases	No of Cases
1	Medical Claims Reimbursed	74
2	HBA granted to officials/officials	9
3	Motor Car Advance granted to employees	6
4	Motorcycle Advance granted to employees	5
5	Officers of department under Power Division for training/course for STI & PPMI etc (Local Training)	75
6	Officers of department under Power Division nominated for e-learning training/ Online training	105
7	Officers of department under Power Division nominated for foreign training	2
8	NESPAK Officers visit aboard NOC cases	61
9	Hiring Sanctions issued in respect of Employees	82
10	Security Pass	50
11	Arm License Case	2
12	Maintenance of Service book and PERs/ACRs	150
13	Defence planning matter	4
14	Transfer Grant	6
15	Encashment	8
16	Farewell Grant	7
17	GP Fund Grant	14

f. Pension Cases:

Sr/No	Activities	Processed
1	Pension Cases	9
2	Family Pension Cases	8
Total		17

g. Public Sector Development Program 2021-22:

During the Financial Year 2021-22 the total Public Sector Development Budget (PSDP) of Power Division was Rs 102.607 billion, as per following details:

(Billion.Rs)

Sr. No	Company Name	No of projects	Project cost				PSDP budget FY 2021-2022			
			Local	Foreign	GoP	Total	Local	Foreign	GoP	Total
1	Power Division	98	372.334	463.578	62.167	898.079	33.122	40.174	29.311	102.607

Organization wise details of the Public Sector Development Program (PSDP) are as under:

NTDC

(Billion.Rs)

Sr. No	Company Name	No of projects	Project cost				PSDP budget FY 2021-2022			
			Local	Foreign	GoP	Total	Local	Foreign	GoP	Total
1	NTDC (on going-GoP Finance Projects)	3	0	8.977	5.485	14.462	0	0	2.650	2.650
2	NTDC (new GoP Finance Projects)	2	0	6.031	3.798	9.829	0	0	3.500	3.500
3	NTDC on going schemes (local+foreign)	54	217.391	376.854	0	594.244	26.122	23.087	0	49.209
4	Total-NTDC	59	217.391	391.862	9.283	618.536	26.122	23.087	6.150	55.359

DISCOS

(Billion.Rs)

Sr. No	Company Name	No of projects	Project cost				PSDP budget FY 2021-2022			
			Local	Foreign	GoP	Total	Local	Foreign	GoP	Total
1	LESCO	1	6.272	24.325	0	30.597	0.1	0.05	0	0.015
2	IESCO	1	8.468	8.462	0	16.930	1	0.01	0	1.010
3	MEPCO	1	0	0	1.890	1.890	0	0	0.573	0.573
4	SEPCO	1	0	0	9.334	9.334	0	0	6.600	6.600
5	HESCO	1	0	0	7.009	7.009	0	0	5.200	5.200
6	QESCO (on going)	20	0	0	23.806	23.806	0	0	6.958	6.958
7	QESCO (new)	6	1.892	0	2.452	4.344	0.9	0	1.264	2.164
8	Total-QESCO	26	1.892	0	26.258	28.150	0.9	0	82.222	9.122
9	PESCO (on going)	4	0	0	5.531	5.531	0	0	0.95	0.95
10	PESCO (SEZs)	2	0	0	2.863	2.863	0	0	1.616	1.616
11	Total-PESCO	6	0	0	8.393	8.393	0	0	2.566	2.566
12	Total-DISCOS	37	16.632	32.787	52.884	102.303	2	0.06	23.161	25.221

GENCO-I/JPCL

(Billion.Rs)

Sr. No	Company Name	No of projects	Project cost				PSDP budget FY 2021-2022			
			Local	Foreign	GoP	Total	Local	Foreign	GoP	Total
1	GENCO-I/JPCL	1	138.296	38.880	0	177.176	5	17	0	22

PPIB

(Billion.Rs)

Sr. No	Company Name	No of projects	Project cost				PSDP budget FY 2021-2022			
			Local	Foreign	GoP	Total	Local	Foreign	GoP	Total
1	PPIB	1	0.015	0.049	0	0.064	0	0.027	0	0.027

h. Federal Complaint Cell (Power Division):

- a. Federal Complaint Cell has been reactivated since June 2015 with the basic aim to address Public complaints as the DISCOs response on the complaints was not satisfactory.
- b. Federal Complaint Cell Ministry of Energy (Power Division) since 15 June 2015 remains operational 24/7 at Ministry of Energy (Power Division). The complainants can approach Federal Complaint Cell through following modes:
 - a. Online System.
 - b. By Telephone.
- c. An effective online system has been activated on the website of Ministry of Energy (Power Division). Consumers all over the country can lodge their complaints which are received in Federal Complaint Cell and the concerned Distribution Companies. A strong monitoring and effective follow-up is done by FCC to ensure that the complaints which are as per rules and regulations are timely addressed. Since June 2015, 330050 complaints have been lodged through online system out of which 314162 have been resolved.

FCC Complaints From 01 July 2021 to 30 June 2022				
Sr. No.	DISCO	Total	Redressed	Pending
1	LESCO	7232	7232	0
2	GEPCO	5175	5173	2
3	FESCO	6632	6632	0
4	IESCO	9147	9147	0
5	MEPCO	31820	31820	0
6	PESCO	2307	2307	0
7	HESCO	3413	3322	91
8	SEPCO	3533	3531	2
9	QESCO	541	541	0
10	TESCO	0	0	0
Total		69800	69705	95

i. Customer Complaint Management System (CCMS).

To facilitate valuable customers, Customer Complaint Management System based on world's best practices and latest Information and Communication Technology (ICT) solution has been implemented since 01 May 2018.

All the DISCOs operate in Divisions, Sub divisions, Customer Service centers and other complaint centers and are connected through this system via Web Portal and Mobile calls/SMS. CCMS is a centralized point of contact through different sources (Call, mobile-App, SMS, email and web portal etc.) by introducing a prompt reply/action in order to provide excellent customer support. Since 01 May 2018, 5211269 complaints have been lodged through online system out of which 5107203 have been resolved

Customer Complaint Management System (CCMS).

Sr/No	DISCOs	CCM Complaints From 01 July 2021 to 30 June 2022		
		Total Complaints	Resolved Complaints	Pending Complaints
1.	LESCO	652508	652481	27
2.	GEPCO	157838	157831	7
3.	FESCO	131165	131163	2
4.	IESCO	380384	380315	69
5.	MEPCO	341404	341319	85
6.	PESCO	40594	40591	3
7.	HESCO	77328	77302	26
8.	SEPCO	16940	16939	1
9.	QESCO	11732	11701	31
10.	TESCO	8	8	0
Total		1809901	1809650	251

j. Written Complaints.

General public can lodge complaints in writing. These complaints are forwarded to the concerned DISCOs for strict follow system is maintained. Written Complaints have been implemented since 01 Oct 2016, 6449 complaints have been lodged and out of which 6272 have been resolved.

Written Complaints Status From 01 July 2021 to 30 June 2022				
Sr/No.	DISCO	Total	Redressed	Pending
1	LESCO	135	130	5
2	GEPCO	77	72	5
3	FESCO	77	73	4
4	IESCO	202	181	21
5	MEPCO	231	220	11
6	PESCO	82	81	1
7	HESCO	115	111	4
8	SEPCO	138	126	12
9	QESCO	6	6	0
10	TESCO	2	2	0
Total		1065	1002	63

k. IMPLEMENTATION OF PRIME MINISTER'S DELIVERY UNIT

CITIZEN PORTAL:-

The Prime Minister's Delivery Unit (PMDU) has been established at PM Office and is using Information and Communication Technology (ICT) based system to ensure efficiency and effectiveness. The purpose of this initiative is to facilitate the general public and to ensure prompt redressal of grievances. So far total of 570076 complaints related to Power Division have registered and out of which 567490 have been resolved. The following are the Present statistics of PMDU :-

Sr / No	Officer	Total Complaints	New	In-progress	Resolved
1	Chairman, (PPMC)	4746	150	5	4591
2	MD, (PPMC)	1065	14	5	1046
3	CEO GENCO	732	13	1	718
4	CEO CPPA	67	0	0	67
5	MD PPIB	68	1	1	66
6	CEO (AEDB)	205	2	0	203
7	MD NTDC	1992	3	6	1983
8	MD Nespak	496	3	1	492
9	MD (NEECA)	29	0	0	29
10	CEO (PITC)	163	1	3	159
11	CEO (NPPMCL)	9	0	0	9
12	GM NPCC	8	0	6	2
13	JS-(PF)	51	0	0	51
14	JS -(Admin)	37	13	4	20
15	JS (Transmission)	2	2	0	0
16	JS (DISCO & Entities)	15	7	8	0
17	JS (Development)	1	1	0	0
18	CEO, IESCO	79699	172	7	79520
19	CEO, QESCO	7337	5	27	7305
20	CEO, PESCO	71380	547	76	70757
21	CEO, HESCO	50128	13	198	49917

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22	CEO, GEPCO	42292	208	15	42069
23	CEO, SEPCO	33256	136	18	33102
24	CEO, LESCO	100271	459	9	99803
25	CEO, MEPCO	105862	308	18	105536
26	CEO, FESCO	68587	99	12	68476
27	CEO, TESCO	1578	1	8	1569
TOTAL		570076	2158	428	567490

ATTACHED ORGANIZATIONS/ ENTITIES (2021-22)

Power Division has 24 Organizations and Entities under the control. Brief description of each Organization / Entity is as under:

1. Power Planning and Monitoring Company (PPMC) Islamabad.
2. Peshawar Electric Supply Company, (PESCO), Peshawar.
3. Islamabad Electric Supply Company, (IESCO), Islamabad.
4. Gujranwala Electric Power Company, (GEPCO), Gujranwala.
5. Lahore Electric Supply Company, (LESCO), Lahore.
6. Faisalabad Electric Supply Company, (FESCO), Faisalabad.
7. Multan Electric Power Company, (MEPCO), Multan.
8. Sukkur Electric Power Company, (SEPCO), Sukkur.
9. Hyderabad Electric Supply Company, (HESCO), Hyderabad.
10. Quetta Electric Supply Company, (QESCO), Quetta.
11. Tribal Area Electric Supply Company, (TESCO), Peshawar.
12. National Transmission & Despatch Company Limited (NTDCL), Lahore.
13. Private Power & Infrastructure Board (PPIB), Islamabad.
14. National Engineering Services Pakistan (NESPAK), Lahore.
15. Central Power Purchasing Agency Guarantee (CPPAG), Islamabad.
16. Alternative Energy Development Board (AEDB), Islamabad.
17. National Power Park Management Company Limited (NPPMCL), Lahore.
18. Power Holding Limited (PHL), Islamabad.
19. GENCO, Holdings Company (GHCL), Islamabad.
20. Jamshoro Power Generation Company, (JPCL / GENCO-I), Jamshoro.
21. Central Power Generation Company Limited, (CPGCL / GENCO-II), Guddu.
22. Northern Power Generation Company Limited, (NPGCL / GENCO-III), Muzaffargarh.
23. Lakhra Power Generation Company Limited, (LPGCL / GENCO-IV), Jamshoro.
24. Power Information Technology Company (PITC), Lahore.

1. POWER PLANNING AND MONITORING COMPANY (PPMC)

Power Planning and Monitoring Company (PPMC) under the Administrative control of Ministry of Energy (Power Division) is playing pivotal role of coordinating and monitoring the key performance indicators of line losses, recoveries and theft control for reduction in line losses on behalf of Ministry of Energy (Power Division) as designated agency of Ministry of Energy (Power Division). Based on the data collected from the DISCOs PPMC prepares reports on the performance of DISCOs, collectively as well as individually.

i. Transmission & Distribution Losses:

T & D Losses	Transmission and Distribution Losses						
	Jul-Jun 2022			Jul-Jun 2021			Inc / Dec
	Units Purchased (Mkwh)	Units Billed (Mkwh)	%age Losses	Units Purchased (Mkwh)	Units Billed (Mkwh)	%age Losses	
	129,725	107,866	16.85	120,192	99,370	17.32	

ii. Recovery %age against Computed Billing (All Consumers):

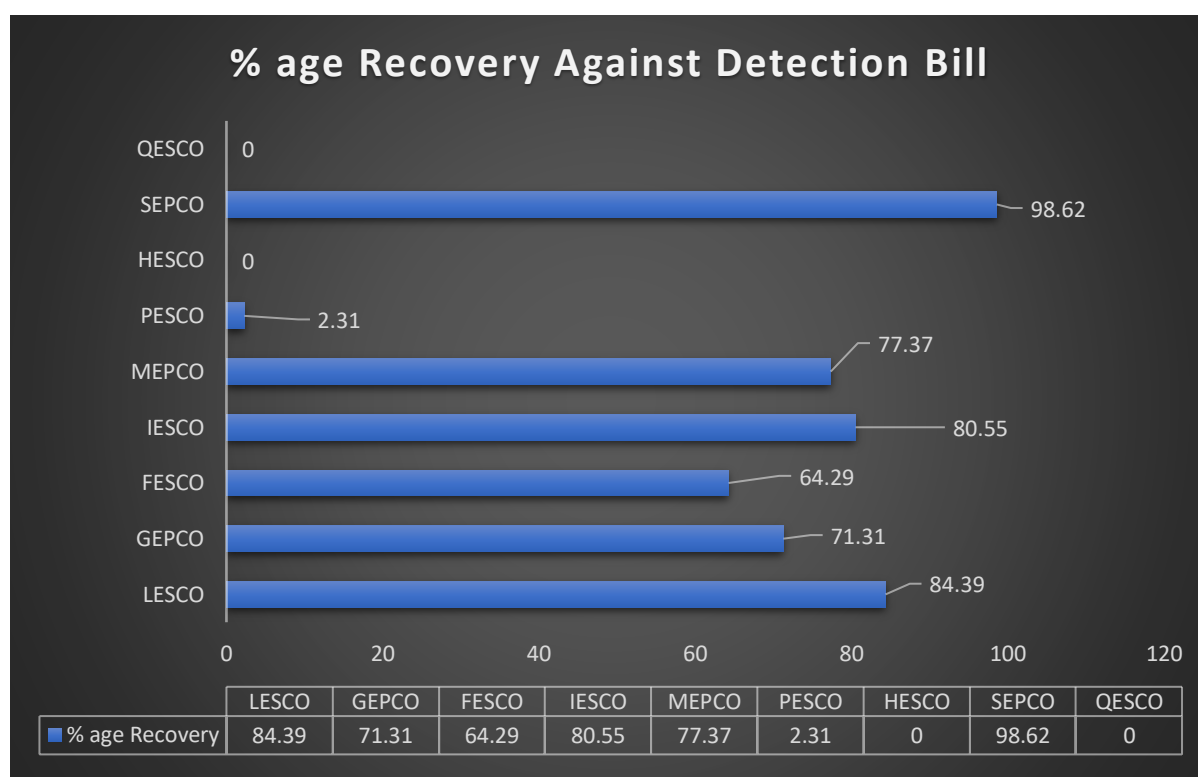
Computed Recovery without subsidy (All Consumers)	Recovery % age against Computed Billing (Without Subsidy)								
	Jul-Jun 2022			Jul-Jun 2021			Inc./Dec w.r.t previous year		
	Billing	Collection	%age Recovery	Billing	Collection	%age Recovery	Billing	Collection	%age
	(Rs in Millions)			(Rs in Millions)					
	2,302,307	2,160,519	93.84	1,745,133	1,733,089	99.31	557,174	427,430	-5.47

iii. Aggregate Technical and Commercial (AT&C) losses (All consumers):

AT & C Losses (Computed Recovery Witjout Subsidy of all Consumers)	AT & C Losses in %age		
	Jul-Jun 2022	Jul-Jun 2021	Inc / Dec
	21.97	17.89	4.08

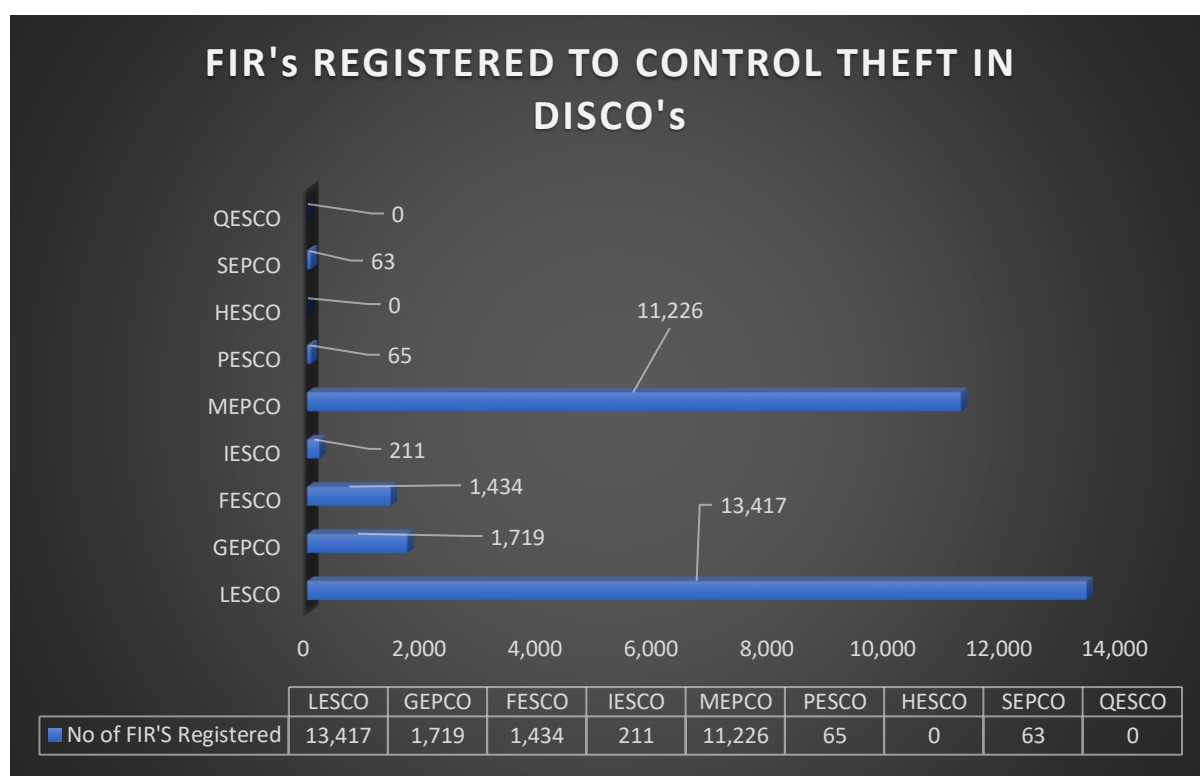
iv. Anti-theft drive:

The progress of Anti-theft drive for the FY-2021-22 is as under:-



v. Anti-theft drive (01.07.2021 to 30.06.2022)

Name of Company	Number of FIR's registered	Number of persons arrested	Total Units Charged (MKWH)	Total amount of detection bills charged (Rs. In Millions)	Total amount of detection bills recovered (Rs. In Millions)	% age Recovery against detection bill
LESCO	13,417	249	46.03	846.44	714.35	84.39
GEPCO	1,719	0	8.13	141.06	100.58	71.31
FESCO	1,434	1	8.48	150.59	96.82	64.29
IESCO	211	0	12.80	265.70	214.02	80.55
MEPCO	11,226	414	40.70	718.01	555.49	77.37
PESCO	65	21	2.63	331.70	7.67	2.31
HESCO	0	0	0.00	0.00	0.00	0.00
SEPCO	63	0	0.31	7.27	7.17	98.62
QESCO	0	0	0.00	0.00	0.00	0.00
Total	28,135	685	119.07	2,460.77	1,696.10	68.93



vi. New Connections Installed during 2021-22:

1,586,098

vii. Number of defective meters replaced during 2021-22:

Single Phase: 1,611,987

3-Phase: 172,559

viii. Number of transformers installed during 2021-22:

Nos. 24,951

MVA 1,346

ix. HT & LT lines added during 2021-22:

HT (km) 4,847

LT (km) 1,741

x. Number of Villages Electrified during 2021-22:

9,198

2. PESHAWAR ELECTRIC SUPPLY COMPANY (PESCO)

Peshawar Electric Supply Company (PESCO) is a public sector company which was incorporated in 1998 after unbundling of Water And Power Development Authority (WAPDA). It is headquartered in Peshawar and provides service of electricity distribution to over 4.2 million consumers of all districts in the province of Khyber Pukhtunkhwa excluding Ex-FATA. PESCO is the fourth largest distribution company in terms of consumers. PESCO distribution system works via 132 & 66KV sub-transmission lines, sub-stations, and 11KV & 440V low tension lines with distribution transformers that deliver electricity. PESCO is divided into eight (08) Circles covering about 1,204,621 Hectares of land in total. Total development Budget of PESCO was Rs 2,565.824 Millions, while it's current Budget is Rs 4,444.035 Millions.

BOARD OF DIRECTORS

Peshawar Electric Supply Company (PESCO) is governed by Board of Directors which includes a blend of very experienced persons from Government and private sector. Composition of the BOD is as under:

Sr/ No	Chairman / Independent Director / Non-Executive Director / Executive Director	Name of Board Member
1	Chairman BOD / Independent Director	Mr. Amir Zafar
2	Independent Director	Engr. Muhammad Hafeez ur Rehman
3	Independent Director	Mr. Muhammad Mohsin Khan
4	Independent Director	Syed Karamat Ali Rizvi
5	Independent Director	Mr. Sadiq Hussain
6	Independent Director	Mr. Arbab Khudadad Khan
7	Independent Director	Mr. Dilroze Khan
8	Non Executive Director	Representative of Power Division
9	Non Executive Director	Representative of Finance Division
10	Non Executive Director	Representative of Govt of KPK
11	Executive Director	CEO PESCO

3. ISLAMABAD ELECTRIC SUPPLY COMPANY (IESCO)

Islamabad Electric Supply Company (IESCO) is public sector company which was incorporated in 1998 after unbundling of Water And Power Development Authority (WAPDA). It is headquartered in Islamabad and provides service of electricity distribution to over 3.2 million consumers in the area from Attock to Jhelum, and from the river Indus to River Neelum in Kashmir covering 06 circles. IESCO is the sixth largest distribution company in terms of consumers. IESCO has 108 Grid Stations having total capacity of 5,224 MVA and distributes the power through 951 Feeders. Advanced Metering Infrastructure (AMI) System comprising of about 9,00,000 meters is under installation in different areas of IESCO. Total development Budget of IESCO was Rs 1010 Millions, while it's current Budget is Rs 2500 Millions.

BOARD OF DIRECTORS

Islamabad Electric Supply Company (IESCO) is governed by Board of Directors which includes a blend of very experienced persons from Government and private sector. Composition of the BOD is as under:

Sr/ No	Chairman / Independent Director / Non-Executive Director / Executive Director	Name of Board Member
1	Chairman BOD / Independent Director	Engr Qamarul Islam Raja
2	Independent Director	Ch. Khalid Munir
3	Independent Director	Mr. Mujahid Pervaz Chattha
4	Independent Director	Mr. Nasir Mehmood Sheikh
5	Independent Director	Mr. Raja Talib Mehdi Khan
6	Independent Director	Mr. Fahad Malik
7	Independent Director	Mr. Major (R) Thir Iqbal
8	Independent Director	Malik Ghulam Mustafa Kandwal
9	Independent Director	Mr. Naeem Iqbal
10	Independent Director	Mr. Adnan Enver Baig
11	Non Executive Director	Representative of Power Division
12	Non Executive Director	Representative of Finance Division
13	Non Executive Director	Representative of Govt of Punjab
14	Executive Director	CEO IESCO

4. GUJRANWALA ELECTRIC POWER COMPANY (GEPCO)

Gujranwala Electric Power Company (GEPCO) is a public sector company which was incorporated in 1998 after unbundling of Water and Power Development Authority (WAPDA). It is headquartered in Gujranwala and provides service of electricity distribution to over 4.1 million consumers in the Gujranwala region in the province of Punjab. The jurisdiction of the company includes Sialkot, Gujranwala, Gujrat and Mandi Bahauddin districts. GEPCO is the fifth largest distribution company in terms of consumers and is divided into 05 circles. GEPCO distribution system works via 132 & 66KV sub-transmission lines, sub-stations, and 11KV & 440V low tension lines with distribution transformers that deliver electricity. GEPCO has 60 Grid Stations having total capacity of 5,005 MVA and distributes the power through 951 Feeders. Total development Budget of GEPCO was Rs 2,565.824 Millions, while it's current Budget is Rs 4,444.035 Millions.

BOARD OF DIRECTORS

Gujranwala Electric Power Company (GEPCO) is governed by Board of Directors which includes a blend of very experienced persons from Government and private sector. Composition of the BOD is as under:

Sr/ No	Chairman / Independent Director / Non-Executive Director / Executive Director	Name of Board Member
1	Chairman BOD / Independent Director	Mr Muhammad Shuaib Butt
2	Independent Director	Mr. Zia Muhi ud din
3	Independent Director	Mr. Atif Sabir Khan
4	Independent Director	Mr. Rana Farhan Moazzan
5	Independent Director	Mr. Fahad Shakoor
6	Independent Director	Mr. Fawad Butt
7	Independent Director	Mr. Muhammad Shoaib
8	Independent Director	Mr. Muhammad Asghar Waraich
9	Independent Director	Mr. Noor Muhammad Mirza
10	Non Executive Director	Representative of Power Division
11	Non Executive Director	Representative of Finance Division
12	Non Executive Director	Representative of Govt of Punjab
13	Executive Director	CEO GEPCO

5. LAHORE ELECTRIC SUPPLY COMPANY (LESCO)

Lahore Electric Power Company (LESCO) is a public sector company which was incorporated in 1998. It is headquartered in Lahore that supplies electricity to 5.9 Million consumers in the districts of Lahore, Okara, Sheikhupura, Nankana and Kasur in the province of Punjab. LESCO is the second largest distribution company in terms of consumers. LESCO's core function is to supply, distribute and sell electricity in the 8 districts, 39 Divisions and 199 Subdivisions it serves. LESCO has 82 Grid Stations and distributes the power through 879 Feeders. LESCO distribution system works via 132 & 66KV sub-transmission lines, sub-stations, and 11KV & 440V low tension lines with distribution transformers that deliver electricity. Total development Budget of LESCO was Rs 150 Millions.

BOARD OF DIRECTORS

Lahore Electric Power Company (LESCO) is governed by Board of Directors which includes a blend of very experienced persons from Government and private sector. Composition of the BOD is as under:

Sr/ No	Chairman / Independent Director / Non-Executive Director / Executive Director	Name of Board Member
1	Chairman BOD / Independent Director	Dr. Syed Zahoor Hussain
2	Independent Director	Miss. Salma Akbar Khatak
3	Independent Director	Mr. Ahsan Ali Chugthai
4	Independent Director	Mr. Hasnain Haider
5	Independent Director	Mr. Abdul Sami
6	Independent Director	Miss. Sadia Khurram
7	Independent Director	Mr. Asim Shouqat Ali
8	Non Executive Director	Representative of Power Division
9	Non Executive Director	Representative of Finance Division
10	Non Executive Director	Representative of Govt of Punjab
11	Executive Director	CEO LESCO

6. FAISALABAD ELECTRIC SUPPLY COMPANY (FESCO)

Faisalabad Electric Power Company (FESCO) is a public sector company which was incorporated in 1998. It is headquartered in Faisalabad and provides service of electricity distribution to 4.8 million consumers in the districts of Faisalabad, Sargodha, Mianwali, Khushab, Jhang, Bhakkar, Toba Tek Singh, and Chiniot in the province of Punjab. FESCO is the third largest distribution company in terms of consumers. FESCO is one of the best electricity distribution company in Pakistan in terms of operational performance, as it has low degree of distribution losses and a high rate of bill collection. It's main service area is Faisalabad, which is known as Manchester of Pakistan for its extensive textile industries.

BOARD OF DIRECTORS

Faisalabad Electric Power Company (FESCO) is governed by Board of Directors which includes a blend of very experienced persons from Government and private sector. Composition of the BOD is as under:

Sr/ No	Chairman / Independent Director / Non-Executive Director / Executive Director	Name of Board Member
1	Chairman BOD / Independent Director	Mr. Muhammad Tehseen Alvi
2	Independent Director	Engr. Muhammad Babar Ikram
3	Independent Director	Mr. Raja Ameer Hamza
4	Independent Director	Mr. Iftikhar Ahmed Ansari
5	Independent Director	Mr. Nauman Khalid
6	Independent Director	Mr. Muhammad Momin Junaid
7	Independent Director	Mr. Rab Nawaz
8	Independent Director	Mr. Muhammad Humair Hayat Khan
9	Independent Director	Mr. Ali Ranja
10	Independent Director	Mr. Mian Farrukh Iqbal
11	Non Executive Director	Representative of Power Division
12	Non Executive Director	Representative of Finance Division
13	Non Executive Director	Representative of Govt of Punjab
14	Executive Director	CEO FESCO

7. MULTAN ELECTRIC POWER COMPANY (MEPCO)

Multan Electric Power Company (MEPCO) is a public sector company which was incorporated in 1998. It is headquartered in Multan and is the largest distribution Company as it provides service of electricity distribution to 7.65 million consumers in the 13 districts of Multan, Vehari, Bhawal pur, Bhawal Nagar, Sahiwal, Khanewal, Rahim Yar Khan, Pak Pattan, Rajan Pur, Layyah, Lodhran, Muzaffar Garh, Dera Ghazi Khan. MEPCO is the largest distribution company in terms of consumers. MEPCO has 141 Grid Stations and distributes the power through 1692 Feeders. MEPCO distribution system works via 132 & 66KV sub-transmission lines, sub-stations, and 11KV & 440V low tension lines with distribution transformers that deliver electricity. Total development Budget of MEPCO was Rs 573 Millions, while it's current Budget is Rs 200 Millions.

BOARD OF DIRECTORS

Multan Electric Power Company (MEPCO) is governed by Board of Directors which includes a blend of very experienced persons from Government and private sector. Composition of the BOD is as under:

Sr/ No	Chairman / Independent Director / Non-Executive Director / Executive Director	Name of Board Member
1	Chairman BOD / Independent Director	Mr. Sardar Jamal Khan Lagari
2	Independent Director	Eng. Fazalullah Durrani
3	Independent Director	Mr. Khurram Mushtaq
4	Independent Director	Mr. Muhammad Nawazish Ali Pirzada
5	Independent Director	Mr. Mian Shahid Iqbal
6	Independent Director	Mr. Asghar Lagari
7	Independent Director	Mr. Amaduddin
8	Independent Director	Mr. Rana Yasir Rauf
9	Independent Director	Mr. Jabir
10	Non Executive Director	Representative of Power Division
11	Non Executive Director	Representative of Finance Division
12	Non Executive Director	Representative of Govt of Punjab
13	Executive Director	CEO MEPCO

8. SUKKUR ELECTRIC POWER COMPANY (SEPCO)

Sukkur Electric Power Company (SEPCO) is a public sector company which was incorporated in 2010 after bifurcating HESCO. It is headquartered in Sukkur that supplies electricity to 0.82 Million consumers in the districts Districts Sukkur, Ghotki, Khairpur, Kashmore / Kandhkot, and some portion of Rahimyar Khan District, Jacobabad, Shikarpur, Larkana, Kamber / Shahdadkot, Dadu some portion of Jamshoro District, Naushehro Feroze portion of Shaheed Benazirabad. SEPCO is the third smallest distribution company in terms of its total number of consumers. SEPCO distribution system works via 132 & 66KV sub-transmission lines, sub-stations, and 11KV & 440V low tension lines with distribution transformers that deliver electricity. Total development Budget of Sukkur Electric Power Company (SEPCO) was Rs 6600 Millions.

BOARD OF DIRECTORS

Sukkur Electric Power Company (SEPCO) is governed by Board of Directors which includes a blend of very experienced persons from Government and private sector. Composition of the BOD is as under:

Sr/ No	Chairman / Independent Director / Non-Executive Director / Executive Director	Name of Board Member
1	Chairman BOD / Independent Director	Mr. Agha Lal Bux Khan
2	Independent Director	Mr. Ghulam Mustafa Lagari
3	Independent Director	Mr. Zafar Ali Sheikh
4	Independent Director	Mr. Imtiaz Ahmed
5	Independent Director	Mr. Dewan Chand Chawla
6	Independent Director	Mr. Aijaz Ali Baloch
7	Independent Director	Mr. Muhammad Irfan Memoon
8	Independent Director	Mr. Ahsan Ahmed Soomro
9	Independent Director	Mr. Naeem Akhtar Odho
10	Independent Director	Mr. Khursheed Ahmed Mirani
11	Non Executive Director	Representative of Power Division
12	Non Executive Director	Representative of Finance Division
13	Non Executive Director	Representative of Govt of Sindh
14	Executive Director	CEO SEPCO

9. HYDERABAD ELECTRIC SUPPLY COMPANY (HESCO)

Hyderabad Electric Power Company (HESCO) is a public sector company which was incorporated in 1998. It is headquartered in Hyderabad which supplies electricity to 1.2 Million Consumers. Hyderabad Electric Power Company (HESCO) is the seventh largest distribution company in terms of consumers. HESCO has administratively divided 12 districts of Sothern Sindh covering Hyderabad, Laar, Nawab shah, Mirpur Khas, excluding Karachi. HESCO is divided into 4 operation Circles, 15 operation Divisions and 69 operation Sub-divisions. HESCO distribution system works via 132 & 66KV sub-transmission lines, sub-stations, and 11KV & 440V low tension lines with distribution transformers that deliver electricity. Total development Budget of HESCO was Rs 5200 Millions, while it's current Budget is Rs 2000 Millions.

BOARD OF DIRECTORS

Hyderabad Electric Power Company (HESCO) is governed by Board of Directors which includes a blend of very experienced persons from Government and private sector. Composition of the BOD is as under:

Sr/ No	Chairman / Independent Director / Non-Executive Director / Executive Director	Name of Board Member
1	Chairman BOD / Independent Director	Mr. Sheikh Jamil Gul
2	Independent Director	Mr. Syed Shahzaman Shah
3	Independent Director	Mr. Javed Jumani
4	Independent Director	Mr. Mohab Ali Khichi
5	Independent Director	Mr. Muzaffar Ali Abbasi
6	Independent Director	Mr. Shabir Ahmed Sulangi
7	Independent Director	Dr. Zafar Ahmed Khan Kamali
8	Independent Director	Mr. Imtiaz ul Haque
9	Independent Director	Mr. Meer Ali Raza Talpur
10	Independent Director	Mr. Anwar Soomro
11	Independent Director	Dr. Kishan Chand
12	Non Executive Director	Representative of Power Division
13	Non Executive Director	Representative of Finance Division
14	Non Executive Director	Representative of Govt of Sindh
15	Executive Director	CEO HESCO

10. QUETTA ELECTRIC SUPPLY COMPANY (QESCO)

Quetta Electric Power Company (QESCO) is a public sector company which was incorporated in 1998. It is headquartered in Quetta which supplies electricity to 0.68 Million Consumers. QESCO second smallest utility company in terms of customers, but the largest utility in terms of area as it covers 43% geographical area of Pakistan. QESCO is responsible for distribution of Electric Power to the entire province of Baluchistan excluding Lasbela district. QESCO is divided into 6 operation Circles, 14 operation Divisions and 55 operation Sub-divisions. QESCO distribution system works via 132 & 66KV sub-transmission lines, sub-stations, and 11KV & 440V low tension lines with distribution transformers that deliver electricity. Total development Budget of QESCO was Rs 9,122.223 Millions, while it's current Budget is Rs 11,015.8 Millions.

BOARD OF DIRECTORS

Quetta Electric Power Company (QESCO) is governed by Board of Directors which includes a blend of very experienced persons from Government and private sector. Composition of the BOD is as under:

Sr/ No	Chairman / Independent Director / Non-Executive Director / Executive Director	Name of Board Member
1	Chairman BOD / Independent Director	Mr. Ahmad Sohail Bazai
2	Independent Director	Eng. Shaikh Jamil Gul
3	Independent Director	Mr. Muhammad Rashid Hussain
4	Independent Director	Mr. Akhtar Muhammad Mandokhel
5	Independent Director	Mr. Sabar Ali Jamali
6	Non Executive Director	Representative of Power Division
7	Non Executive Director	Representative of Finance Division
8	Non Executive Director	Representative of Govt of Balochistan
9	Executive Director	CEO QESCO

11. TRIBAL AREA ELECTRIC SUPPLY COMPANY (TESCO)

Tribal Electric Power Company (TESCO) is a public sector company which was incorporated in 2004. It is headquartered in Peshawar which supplies electricity 0.44 million consumers in the area of FATA (present-day Merged Tribal Districts). TESCO is the smallest distribution company in terms of its total number of consumers. TESCO is divided into 1 operation Circles and 06 operation Divisions. TESCO distribution system works via 132 & 66KV sub-transmission lines, sub-stations, and 11KV & 440V low tension lines with distribution transformers that deliver electricity.

BOARD OF DIRECTORS

Tribal Electric Power Company (TESCO) is governed by Board of Directors which includes a blend of very experienced persons from Government and private sector. Composition of the BOD is as under:

Sr/ No	Chairman / Independent Director / Non-Executive Director / Executive Director	Name of Board Member
1	Chairman BOD / Independent Director	Mr. Amir Zaffar
2	Independent Director	Eng. Muhammad Hafeez ur Rehman
3	Independent Director	Mr. Mohsin Khan
4	Independent Director	Mr. Syed Karamat Ali Rizvi
5	Non Executive Director	Representative of Power Division
6	Non Executive Director	Representative of Finance Division
7	Non Executive Director	Representative of Govt of KPK
8	Executive Director	CEO TESCO

12. NATIONAL TRANSMISSION AND DESPATCH COMPANY (NTDC)

NTDC was incorporated as a Public Limited Company on 06th November, 1998 under the Companies Ordinance 1984 to link Power Generation Units with Load Centers spread all over the country (including Karachi) by way of evacuating power from the hydroelectric plants (mainly in the North), the thermal units of public sector (GENCOs) and private sector (IPPs) (mainly in the South) to the power distribution companies through its network.

The license for engaging in the transmission business was granted by NEPRA in December, 2002 for a period of thirty years. The paid-up / share capital of the company is PKR 52.7 Billion and Government of Pakistan owns 88 % shares, whereas 12 % are owned by employees.

1. Transmission and Network Operations

2. Operation and maintenance of existing 500 & 220 kV network
3. Planning, design and construction of new 500 and 220 kV System
4. Strengthening and upgrading of existing transmission network.

2. System Operator

1. Arranging non-discriminatory, non-preferential economic despatch
2. Ensuring safe, secure and reliable supply

3. Wire Business

1. Transmission Planning
2. Design & Engineering
3. Project Development and Execution
4. Operation and Maintenance of Transmission Assets

4. System Operation and Despatch

1. Generation Despatch
2. Power System Operation and Control.

NETWORK STATISTICS & PROJECTS DATA:

For the smooth functioning of the entire power sector, smooth functioning of NTDC is extremely critical. It serves as the backbone of the entire Power Sector. Accordingly, it is essential for NTDC that its core functions are being carried out efficiently, economically and timely. Since all these core functions are interdependent, correlated and have to be completed in a synchronized manner, delay/interruption in any of the aforementioned core functions will adversely affect the entire electricity network in the country besides financial implications to the tune of Billions of rupees.

The paid-up / shared-up capital of the company is PKR 52.7 Billion and Government of Pakistan owns 88 % shares, whereas 12 % are owned by employees.

Being backbone of the entire power sector, NTDC acts as “System Operator”- being custodian of National Power Control Center (NPCC) and mainly responsible for managing the operation

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and maintenance (O&M) of the transmission network comprising 16 Nos. 500 kV and 45 Nos. 220 kV grid stations besides 18,751 kms of 500 kV and 220 kV transmission lines network spread across the length and breadth of the country. The region-wise break-up is given below:

Voltage Level (kV)	No. of Grid Stations	Transmission Lines (km)	MVA Capacity
500 kV	16	7,470	24,000
220 kV	45	11,281	31,900
Total	61	18,751	55,900

The above figures of increase in transmission line lengths and MVA capacity have been achieved through completion of numerous development projects in a relatively short period of time. The list of projects completed during 2021-22 is as below:

Sr. No	Project Description	Completion Date	MVA / km
1.	Addition of 220/132 kV, 1x160 MVA T/F at 220 kV Muzaffargarh G/S (160 MVA)	19 Jul 21	160 MVA
2.	± 660 kV Matiari-Lahore HVDC T/L Project for evacuation of 4000 MW from power plants in South region	01 Sep 21	886 km
3.	500 kV Port Qasim Matiari-Lucky transmission line for evacuation of 660 MW from Lucky CFPP	09 Nov 21	24.72 km (circuit length)
4.	3x37 MVAR, 500 kV Shunt Reactor on Rawat-Nokhar T/L	30 Dec 21	3x37 MVAR
5.	Augmentation of transformer 220/132 kV T/F (250 MVA) at 500 kV Rawat G/S	31 Dec 21	250 MVA
6.	Augmentation of transformer 220/132 kV T/F (250 MVA) at 220 kV WAPDA Town G/S	02 Jan 22	250 MVA
7.	500 kV T/L for interconnection of TEL CFPP with existing Thar-Matiari T/L for evacuation of 330 MW from TEL CFPP	06 Jan 22	2.6 km (circuit length)
8.	500 kV Neelum-Jhelum (Phase-II) T/L from Domeli to Gakkhar for evacuation of power from 969 MW Neelum Jhelum hydro power plant	13 Jan 2022	266 km (circuit length)
9.	500 kV Karot-Neelum-Jhelum T/L for evacuation of power from 720 MW Karot hydro power plant	13 Jan 2022	06 km (circuit length)
10.	3x37 MVAR, 500 kV Shunt Reactor on Gatti-Barotha Cct-II	31 Jan 22	3x37 MVAR

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11.	3x37 MVAR, 500 kV Shunt Reactor on Guddu-Shikarpur T/L	07 Feb 22	3x37 MVAR
12.	Extension works at 220 kV Chishtian G/S	08 Feb 22	160 MVA
13.	3x37 MVAR, 500 kV Shunt Reactor on Sheikhpura-Nokhar T/L	08 Feb 22	3x37 MVAR
14.	Reconductoring of 220 kV Gatti-Bandala T/L	07 Mar 22	05 km (reconductoring)
15.	Extension works at 220 kV Kassowal G/S	19 Mar 22	250 MVA
16.	220 kV Shikarpur-Uch T/L (37.2 km D/C & 55.96 km S/C)	23 Mar 22	130.36 km (circuit length)
17.	Interim arrangement for evacuation of power from 2x1100 MW K-3 nuclear power plant by connecting 500 kV D/C T/L through existing 500 kV S/C T/L Hub-Jamshoro Circuit-II	25 Mar 22	34.06 km (circuit length)
18.	220 kV Jhimpir-II G/S	26 Mar 22	2x250 MVA (T2 & T3)
19.	132 kV T/L for Jhimpir-II G/S	26 Mar 22	162.68 km (circuit length)
20.	220 kV T/L for Jhimpir-II G/S	26 Mar 22	82.4 km (circuit length)
21.	220 kV transmission line for Faisalabad West G/S	06 Apr 22	90 km (circuit length)
22.	500 kV Faisalabad West G/S	12 Apr 22	2x750 MVA (500/220 kV) 2x250 MVA (220/132 kV)
23.	Extension works at 220 kV ISPR / Sangjani G/S	14 Apr 22	160 MVA
24.	Commissioning of 250 MVA T/F (T1) at 220 kV Jhimpir-II G/S	22 Apr 22	1x250 MVA
25.	Extension works at 220 kV Jhimpir-I G/S	23 Apr 22	250 MVA
26.	Extension works at 220 kV switchyard of NGPS Piran Ghaib	15 May 22	160 MVA
27.	220 kV D/C T/L for 220/132 kV Lalian G/S by IN/OUT of Gatti- Ludewala T/L	04 June 22	02 km (circuit length)
28.	220 kV Lalian G/S (priority portion)	16 June 22	1x250 MVA
29.	Extension works at 500 kV Nokhar G/S (500/220 kV T/F)	22 June 22	1x600 MVA
30.	220 kV Uch-Sibbi T/L	25 June 22	230 km (circuit length)

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A summary of addition in transmission system since 2021 is given below for reference:

Addition in Transmission System in Last Year			
Category	Grid Stations	Transmission Lines	Capacity (through addition of G/S, Augmentation/Ext. Works)
	Nos.	km	MVA
500 kV	01 (Faisalabad West G/S)	149.6	1500
220 kV	01 (Jhimpir-II G/S)	196	1820
±660 kV (HVDC)	02 Converter Stations	886	4800
Total	02 (AC) 02 (DC)	345.6 (AC) 886 (DC)	3320 (AC) 4800 (AC Switching Station of HVDC)

FUTURE EXPANSION OF TRANSMISSION SYSTEM:

In addition to the above, NTDC has also drafted a Transmission Expansion Plan up to 2025 which envisages completion of a number of projects which will see the transmission system expand to nearly double its present transformers' MVA capacity as shown on the next page:

Future System (2025)			
Category	Grid Station (No.)	Transmission Lines (km)	Capacity (MVA)
500 kV	24	12,816	41,250
220 kV	67	15,901	54,706
765 kV	02	500	6000
±500 kV	1 (Converter Station)	113	1,576
Total	94	29,330	103,532

CPEC & OTHER TECHNOLOGICAL INTERVENTIONS:

NTDC has also entered into new initiatives of transmission network in the ambit of CPEC and through international collaboration. Following are significant initiatives:

1. ±660 kV, HVDC Transmission Line Project (878 km length) from Matiari, Hyderabad to Head Balloki, Lahore (for evacuation of 4000 MW of energy)
Construction work on this T/L is complete and bipolar high- power tests

completed in August 2021, which is a significant milestone before COD of the project (i.e., 01.09.2021).

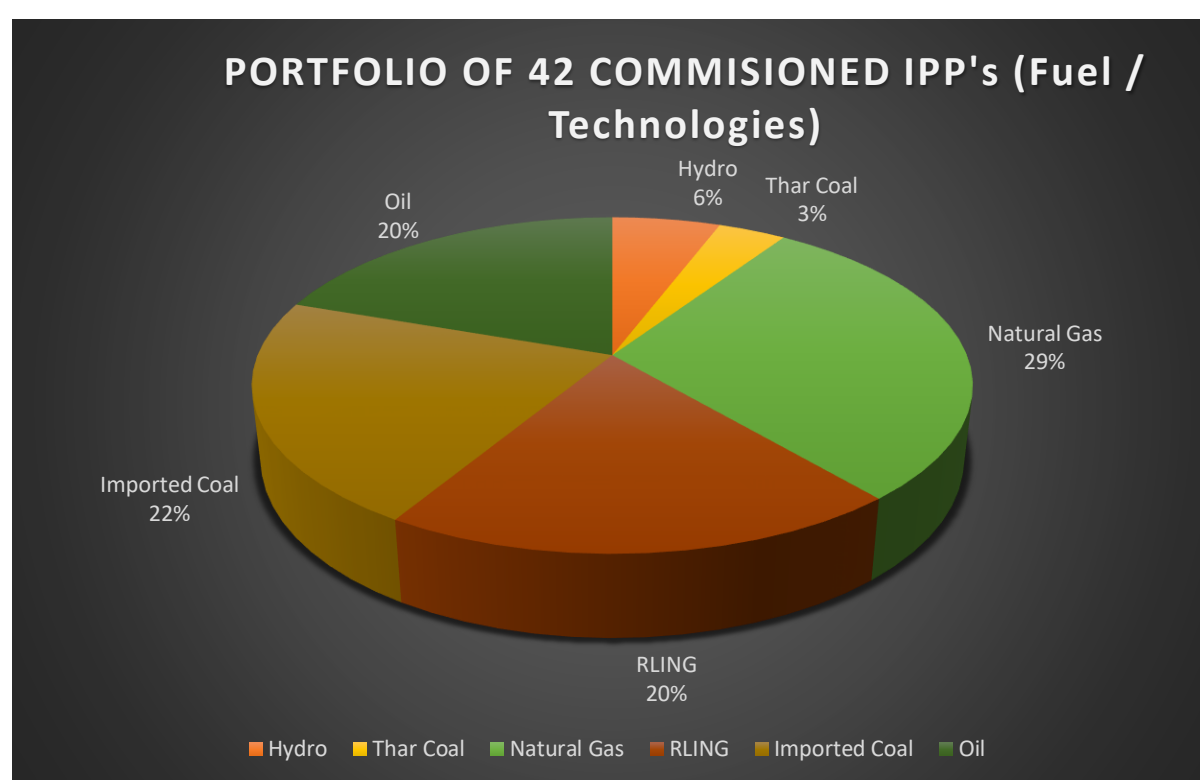
2. CASA-1000 for evacuation of 1000 MW of power (during the summer season) through ± 500 kV HVDC Transmission Line emanating from Kyrgyzstan and passing through Sangtuda, Tajikistan, Afghanistan and terminating at Nowshera Pakistan.
3. 765 kV Transmission Line Project (250 km length) for dispersal of 4200 MW of power from upcoming Dasu Hydropower Project and culminating at future 765 kV Islamabad West grid station (the first of its kind in Pakistan).
4. Construction of grid stations and allied transmission lines at Swabi (for Rashakai SEZ), Haripur (for Hattar SEZ), Allama Iqbal Industrial City (for FIEDMC SEZ), Dhabaji (for Dhabaji SEZ) etc. for provision of electricity to Special Economic Zones (SEZs) under CPEC.

RELIABLE DESPATCH & REMOVAL OF SYSTEM CONSTRAINTS:

1. To maintain the system stability while ensuring reliable dispatch of power, NTDC has critically evaluated segments of its age-old system and taken revolutionary measures to stabilize the system to ensure minimum interruptions / breakdowns. In this regard, unprecedented progress has been achieved with regard to phase-wise removal of System Constraints. Presently, NTDC has overcome major System Constraints (13 number projects) for Summer 2022, while efforts are being made to expand the system in order to overcome the Constraints intended for removal in future (beyond 2022).
2. A testament to the reliability of NTDC's Transmission System to handle and efficiently evacuate large quantum of energy is the maximum generation of 24,330 MW recorded on 07/07/2021 @ 1425 hours. This generation figure is the record maximum ever achieved in the history of NTDC.

13. POWER PLANNING AND INFRASTRUCTURE BOARD (PPIB)

Private Power and Infrastructure Board (PPIB) was created in 1994 as a "One-Window Facilitator" on behalf of the Government of Pakistan (GoP) to promote private investments in power sector. It was given statutory status in 2012 through an Act of the Parliament in 2012. In order to allow specific public sector projects to be processed in IPP mode, an amendment Act was passed in 2016. Inter alia other functions, PPIB approves IPPs, issues LOIs & LOSs), approves Feasibility Studies, executes Implementation Agreements (IAs), provides GoP guarantees, and recommends and facilitates power policies. PPIB has a track record of attracting around US dollars 22 billion worth of investment with the establishment of forty two IPPs totalling 18,931 MW which constitutes around 50% of installed power generation capacity in the country. PPIB also has a legacy of facilitating country's first private sector HVDC transmission line project.



Portfolio of 42 Commissioned IPPs						
Fuels/Technologies						
Hydro	Thar Coal	Natural/Low Btu Gas	RLNG	Imported Coal	Oil	
1053 MW	660 MW	5,372 MW	3,633 MW	3,960 MW	3,593 MW	

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During 2021-22, despite COVID-19 challenge, following projects have been completed through PPIB's extensive facilitation which was provided uninterruptedly to the project companies:

Sr. No	Project Name	Location	Fuel	Capacity (MW)	Date of Completion
(A) Power Generation Projects					
1	Karot	River Jehlum, AJ&K/Punjab	Hydel	720	29.06.2022
2	Lucky Electric	Port Qasim, Near Karachi	Thar Coal	660	21.03.2022
Total (MW)				3,462	
(B) Transmission Line Project					
3	Matiari-Lahore HVDC	Matiari(Sindh)-Lahore (Punjab)	-	4000 MW	01.09.2021

Currently, PPIB is processing a portfolio of power generation projects which is comprehensively dominated by renewable hydro and Thar coal based IPPs. Summary is as follows:

Portfolio of Upcoming 20 Projects of 10648 MW					
	FC Achieved/ under construction	LOS issued	Candidate Projects in the IGCEP Portfolio	To be processed as per requirements of new capacity in the IGCEP	Total
Hydro	2 IPPs of 891 MW	3 IPPs of 1832 MW	4 IPPs of 1472 MW	4 IPPs of 1260 MW	13 IPPs of 5455 MW
Thar Coal	3 IPPs of 1980 MW	1 IPP of 330 MW*	1 IPP of 1320 MW	-	5 IPPs of 3630 MW
RLNG	1 IPP of 1263 MW	-	-	-	1 IPP of 1263 MW
Imp. Coal	-	1 IPP of 300 MW	-	-	1 IPP of 300 MW
Total	6 IPPs of 4134 MW	5 IPPs of 2462 MW	5 IPPs of 2792 MW	4 IPPs of 1260 MW	20 IPPs of 10648 MW

* 330 MW Thar Coal based Siddiqsons project is currently under litigation.

PPIB/GoP are fully cognizant of the climate change agenda, therefore, all projects including coal are strictly complying with international environmental standards of World Bank / IFC.

14. NATIONAL ENGINEERING SERVICES PAKISTAN (NESPAK)

NESPAK is Pakistan's premier consultancy organization and it was established in 1973 as a private limited company by the Government of Pakistan. The objective of its creation was to create a pool of talented engineers, attain self-reliance in engineering consultancy and replace foreign consultants. During the period July 2021 to June 2022, NESPAK continued to provide consultancy services to its Clients at home and abroad on 253 multidisciplinary projects. Following are the major ongoing projects of NESPAK:

Sr / No	Name of Project
1	4500MW Diamer Basha Dam
2	800MW Mohmand Dam Hydropower Project
3	Provincial Sector Development Project (North Punjab)
4	Reconstruction and Rehabilitation of Earthquake Affected Areas
5	Projects under Annual Development Program
6	Strengthening of East-West Connectivity of Merged Areas (FATA) with Settled Districts and Improvement Links (AIP 2019-20-CR042)
7	New Gwadar International Airport
8	Ravi Riverfront Urban Development Project (RRUDP), Punjab
9	Punjab Intermediate Cities Improvement Investment Program (PICIIP)
10	Establishment of Infrastructure in LDA City (Phase-I) Lahore
11	1263MW Re-Gasified Liquefied Natural Gas (RLNG) Based Combined Cycle Power Plant near Trimmu Barrage in Jhang District
12	LDA Projects: (i) LDA City (ii) Shahkam Chowk Flyover Bahria Town, Lahore
13	National Program for Improvement of Watercourses in Pakistan, Phase-II
14	Trimmu and Panjnad Barrages Improvement Project
15	500kV Double Circuit Quad Bundle Transmission Line: Nokhar S/S - Lahore, North S/S - Lahore HVDC Converter Station
16	Provincial Sector Development Project (South Punjab)
17	Revamping of Non-Teaching DHQ Hospital in Khyber Pakhtunkhwa (Phase-1, 2, 3a, 3b & 4)
18	Lahore Airport Extension
19	Balochistan Water Resources Development Sector Project (BWRDSP)
20	Roads and Infrastructure in Town of Duqm (Package-I), Oman
21	Dams in Southern Region, Saudi Arabia

NEW PROJECTS

During the period under review, the Company secured business worth Rs. 12.0 billion (estimated) in Pakistan and overseas. Total numbers of projects secured during this period were 170 which included 166 domestic and 04 overseas jobs. Outside Pakistan, business was won in Afghanistan, Nigeria, Qatar and Uzbekistan.

Some major projects secured by NESPAK during this period are as follows:

Sr / No	Name of Project
1	Provincial Sector Development Project (North Punjab)
2	Provincial Sector Development Project (South Punjab)
3	Bus Rapid Transit (BRT) Yellow Corridor under Karachi Mobility Project
4	Ravi Riverfront Urban Development Project (RRUDP), Punjab
5	Underpasses and Flyovers for Elimination of Level Crossing from Loop Section of Karachi Circular
6	Sub-Projects of SOP-I, Karachi Water & Sewerage Services Improvement Project
7	Development of Central Business Development (CBD), Punjab
8	Project Readiness Financing for Punjab Water Resources Management - ADB Loan No. 6027-PAK; Detailed Design for Irrigation Canal and Link Canal Projects
9	Digitized Mapping through Web Based Enterprise GIS Application for the Distribution Network of Islamabad Electric Supply Company
10	Construction of New Office Building at Karachi
11	Infrastructure Design of Islamabad Special Technology Zone
12	Sustainable Hydropower Project (Construction of Rabat, Chappasuy, Tamshush HPPs with Associated Transmission Line in Kashkadarya Region), Uzbekistan
13	Purpose-Built-Consular Services Building at the Pakistan Mission in Kabul, Afghanistan
14	Preparation of ESIA (with ESMP) and RAP for Marina & Mile 2 Interchanges under CNG 1053-LAGOS Strategic Transport Master Plan Project (LSTMPP-1) Nigeria
15	Access Road North Field East Project, Qatar

PROJECTS COMPLETED

During July 2021 to June 2022, NESPAK successfully completed 80 projects at home and abroad. Some important projects are:

Sr / No	Name of Project
1	Lahore Orange Line Metro Train Project (27km)
2	500kV Transmission Line 3rd Circuit Jamshoro-Matiari-Moro-Dadu-Rahim Yar Khan and Moro
3	Sialkot Lahore Motorway Project
4	Elevated Expressway from Mall Road to Faizabad Interchange, Rawalpindi
5	Elevated Expressway from Lahore Bridge to Niazi Interchange
6	Widening & Strengthening of Qila Saifullah to Bewata via Waigum Rud - Khajuri
7	Flyover (Complete Signal Free Interchange) at Aziz Cross, Gujranwala
8	Shiplift and Transfer System at KS&EW, Karachi
9	Dualization of Muzaffargarh-DG Khan Road (52km) Pertaining to Highway Circle, D.G. Khan
10	Damages/Rehabilitation of NHA Highways Network Due to Flash Flood 2010
11	Resident Construction Supervision of Bridge Over River Chenab at Shahbazpur to Connect District Gujrat with District Sialkot
12	Workers Welfare Fund Labour Complex, Taxila
13	Dual Carriageway Road for NR-32 Phase-I Duqm, Oman
14	Repair Works on Wadi Bani Khalid Road (North Al-Sharqiyya Governorate), Oman
15	200-bed Jinnah Hospital Kabul and Naeb Amin Ullah Khan Logari Hospital at Logar, Afghanistan
16	Madha Bypass Road Buraimi, Oman

15. CENTRAL POWER PURCHASING AGENCY GUARANTEE (CPPA-G)

Central Power Purchasing Agency Guarantee (CPPA-G) is a Company incorporated under the Companies Ordinance, 1984 and wholly owned by the Government of Pakistan since June 2015, CPPA-G is functioning as the Market Operator. The CPPA-G being the Market Operator is facilitating the power market transition from the current single buyer to competitive market, while changing the market model, the overall strategy is to bring efficiency through competition in generation. The Company is currently performing power procurement on behalf of DISCOs, strategy and market development, human resource management and information technology. Following activities, have been performed by CPPA-G during the year 2021-22:

1. IT Initiatives:

During the reporting period, an in-house application for Market Management System (MMS) has been developed by CPPA-G which automated the core processes written under Market Commercial Code (MCC). By virtue of this application, CPPA-G has published its first Preliminary Settlement Statement (PSS) and circulated among relevant stakeholders.

In addition to that, System Operator Data Exchange portal (SDXP) has been developed, tested and handed over to System Operator (SO) by CPPA-G. This portal automates the core processes of system operator including getting availability of IPPs and system dispatch instructions. IPPs have been trained to get familiar with this data exchange portal and get expertise to use it on regular basis. A file sharing server has been developed which made the data sharing across the organization smooth and convenient.

Fuel Cost Adjustment (FCA) process has been automated and improved in ERP System. Online Metering Data submission portal and its onward integration with MMS system were completed during reporting period. Further, market operations and development data has been uploaded on Enterprise Content Management (ECM) and civil work of new site of tier-III Data Centre has been started. Likewise, RFP for MO website has been published.

Moreover, Phase-I of Market Operator website has been completed comprising of UI/UX design, admin panel and content management system. This website is designed with the prime objective of ensuring transparency in the market and providing accurate data to the market stakeholders. In addition to MO website, the upgradation of website pertaining to SPA function of CPPA website has also been started.

2. Grant of Market Operator License to CPPA-G by NEPRA:

Market Operator (MO) license has been granted to CPPA-G by NEPRA on May 31, 2022. With the grant of this license, the test run phase of the CTBCM has formally been launched for a period of 6 months. It is pertinent to highlight that test run phase is aimed to simulate and test the CTBCM transactions using real data however there is not any financial implication on the market participants. For the grant of this license, CPPA-G had submitted the MO licensing

application to NEPRA on October 14, 2021. Consequently, after stringent scrutiny and rigorous regulatory process, NEPRA granted the MO license to the CPPA-G on May 31, 2022. The MO License was accompanied with the approved Market Commercial Code and the Test Run Plan, the details of which are given in the following two points.

3. Approval of Market Commercial Code by NEPRA:

Market Commercial Code has also been approved by NEPRA on May 31, 2022, along with the grant of MO license. The draft of CPPA-G has submitted the draft Market Commercial Code for approval of the Authority under section 23A and 23B of NEPRA Act on October 14, 2021. Accordingly, as per regulatory process, the Authority has published the notices in the press on March 05, 2022, to seek comments from the stakeholders. CPPA-G submitted the rejoinders on the stakeholders' comments in due time. Consequently, after stringent scrutiny and rigorous regulatory process, Authority approved Market Commercial Code on May 31, 2022.

4. CTBCM Test Run Plan:

A six-month long test run plan encapsulating 24 actions has been undertaken by CPPA-G from the date of granting MO License as approved by NEPRA. Test run phase does not have any financial implication on any market player. However, as per direction of NEPRA, testing of processes, IT systems and methodologies developed under MCC is inevitable for checking readiness of the market players. Henceforth, CPPA-G has been successfully coordinating with the DISCOs, NTDC (in its roles as TSP and system operator), K-Electric, and other stakeholders to perform the test-run plan actions.

5. Monitoring of CTBCM Implementation by Market Implementation Monitoring Group (MIMG):

During the reporting period, MIMG has been successfully held regular meetings in which the implementing power sector entities presented the status of their relevant actions under CTBCM plan to the MIMG. During these meetings, relevant implementing agencies including DISCOs, K-Electric, NTDC, NPCC of NTDC, PPIB, AEDB and CPPA-G presented progress updates regarding their respective CTBCM actions. It's the result of guidance and monitoring of MIMG that all relevant stakeholders completed their tasks envisaged under CTBCM implementation plan within due time.

6. Information Dissemination on CTBCM via Roadshow Workshops:

Roadshow workshops have been planned in all capital cities of Pakistan for creating awareness and developing understanding of CTBCM. So far, CPPA-G has successfully organized roadshows in Lahore and Peshawar during the reporting period. Moreover, remaining three roadshows in Karachi, Islamabad and Quetta respectively are in pipeline and will be held in the coming months. These roadshows were attended by participants from Provincial Bodies, Policy Institutes, Bulk Power Consumers (BPCs), IPPs and academia.

7. Trainings under Power Sector Center of Excellence (PSCE):

For stakeholders capacity building and undertaking relevant tasks envisaged in CTBCM, CPPA-G in coordination with LUMS has established a Power Sector Center of Excellence (PSCE) during the reporting period. Under PSCE, nine specialized trainings have been organized for DISCOs, KE, NTDC, NPCC, NEPRA and CPPA.

8. Electricity Market Professional (EMP) Program 2022:

During the reporting period, CPPA-G has successfully delivered the third iteration of its signature EMP Program wherein two modules of the EMP Batch-III has been completed and final module for certification is in pipeline. The program was housed at LUMS under PSCE, comprising of 3 modules of 5-days each. It was attended by around 150 participants from all the ten DISCOs, KE, NTDC, NPCC, PPIB, AEDB NEPRA, MoE (PD) & CPPA-G.

16. ALTERNATIVE ENERGY DEVELOPMENT BOARD (AEDB)

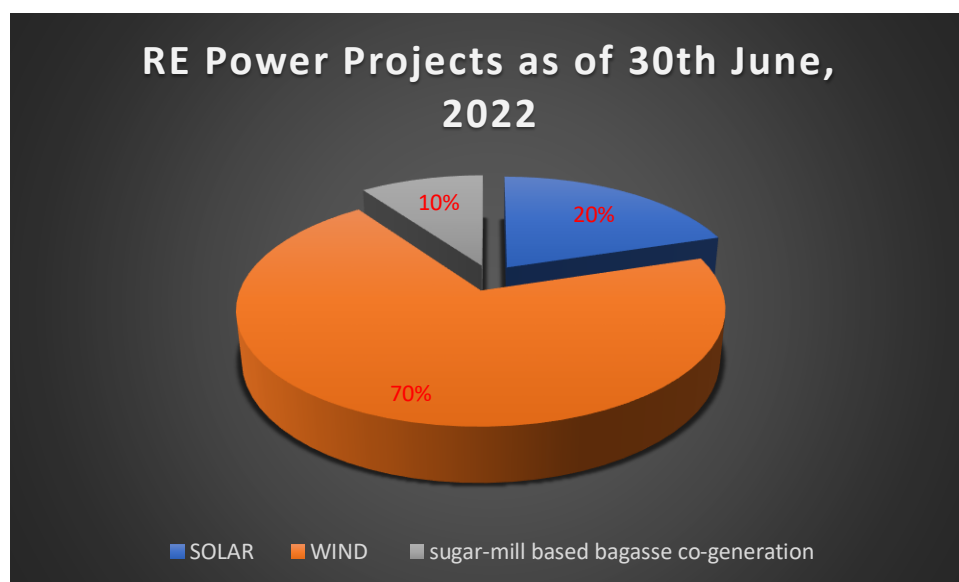
Alternative Energy Development Board (AEDB) is the sole representing agency of the Federal Government that was established in May 2003 with the main objective to facilitate, promote and encourage development of Renewable Energy in Pakistan and with a mission to introduce Alternative and Renewable Energies (AREs) at an accelerated rate.

Alternative Energy Development Board (AEDB) has been promoting and facilitating the development and deployment of alternative and renewable energy technologies in the country. The development of renewable energy based power generation projects is being pursued on IPP mode through private sector investors. The status of RE power projects as of 30th June, 2022 is given below:

Thirty six (36) wind power projects of 1,835 MW cumulative capacity were operational and providing electricity to the grid.

Seven (07) solar projects of 530 MW cumulative capacity were operational.

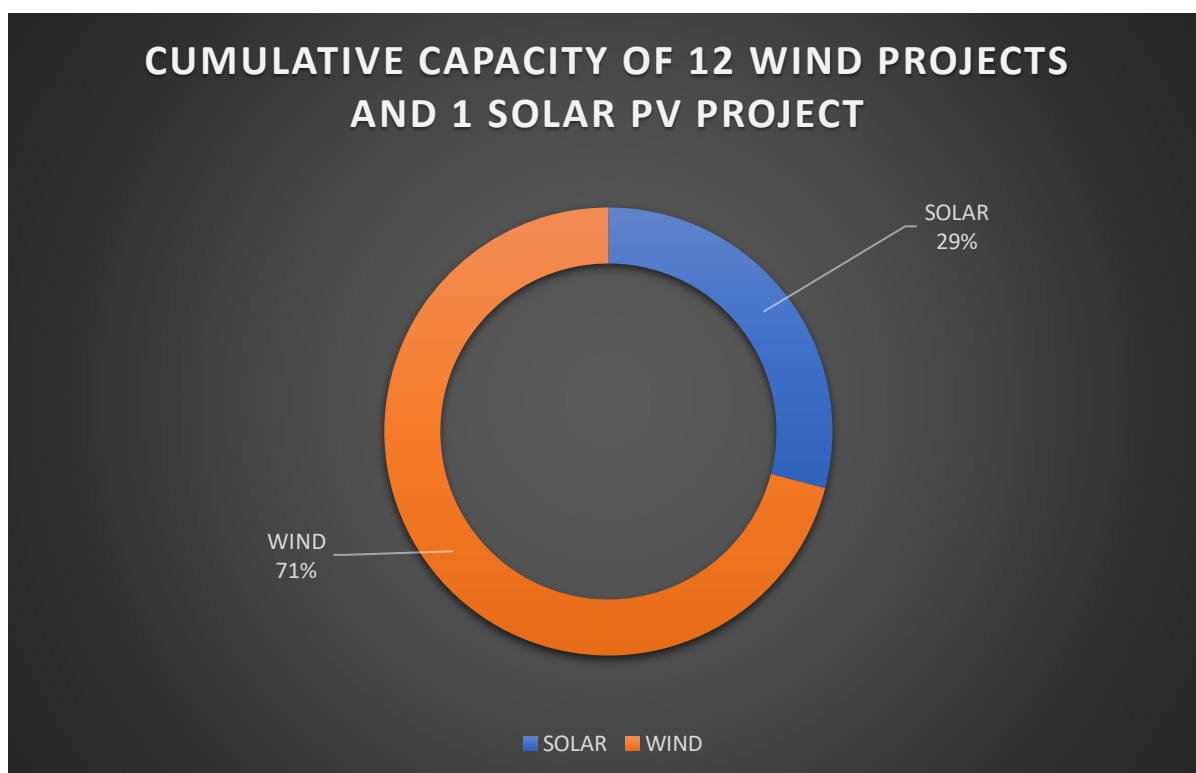
Eight (08) sugar-mill based bagasse co-generation projects of 259.1 MW capacity were operational.



Several ARE projects, initiated under the RE Policy 2006, were not able to proceed with their development due to restrictions imposed vide decisions taken by Cabinet Committee on Energy (CCOE) dated 12th December, 2017. To exploit clean energy resources and increase the share of ARE in the energy mix, the Cabinet Committee on Energy (CCOE) vide its decisions dated February 27, 2019 allowed implementation of projects that had already achieved significant milestones of project development by placing them into following three categories;

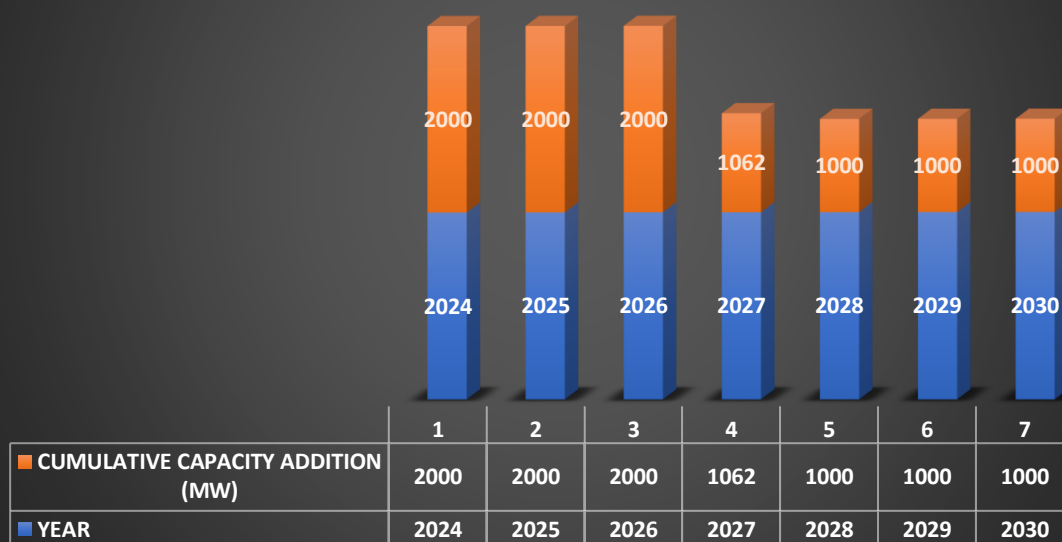
1. Category-1: 19 projects of 531 MW that have already been issued Letter of Support (LOS) subject to revision of tariff in case tariff determination has been done since more than one year or if the tariff validity period has lapsed
2. Category-II: 24 projects of 1339 MW that have acquired tariff and generation license subject to revision of tariff in case tariff determination has been done since more than one year or if the tariff validity period has lapsed
3. Category-III: 107 projects of more than 6,557 MW cumulative capacity holding LOIs to be allowed to proceed ahead after becoming successful in a competitive bidding to be undertaken as per demand communicated by NTDC.

AEDB has actively been facilitating the said projects. During 2021-22, twelve (12) wind power projects with a cumulative capacity of 610 MW have been facilitated to successfully achieve COD. Moreover, 01 solar PV project of 250 MW capacity has also been facilitated to achieve COD.



The IGCEP 2021, approved by the Regulator, provides the following capacity additions from wind and solar energy by 2030:

CUMULATIVE CAPACITY ADDITION FROM WIND AND SOLAR BY 2030



Year	Capacity addition through Wind Energy (MW)	Capacity addition through Solar Energy (MW)	Cumulative Capacity Addition (MW)
2024	1000	1000	2000
2025	1000	1000	2000
2026	1000	1000	2000
2027	62	1000	1062
2028	-	1000	1000
2029	-	1000	1000
2030	-	1000	1000
Cumulative Capacity Addition			10,062

AEDB prepared the RFP package for carrying out competitive bidding for wind and solar pipeline projects falling under category-III. The RFP documents will be floated after submission of final RFP documents approved by AEDB Board to NEPRA and determination of benchmark tariff by NEPRA.

The subsequent rounds of competitive bidding will be carried out under the ARE Policy 2019 for procurement of RE based capacity in line with the capacity addition requirements of the IGCEP.

STEPS & MEASURES TAKEN BY AEDB FOR PROMOTION AND DEVELOPMENT OF RENEWABLE ENERGY

1. AEDB undertook a number of supportive measures in order to promote ARE technologies and to attract private sector investments. Some of the supportive measures taken by AEDB are as follows:
2. AEDB proactively facilitated the RE power projects in achieving their project milestones and resolution of issues and impediments faced by the project sponsors from different public sector entities.
3. Assisted World Bank in carrying out the Pakistan Renewable Energy Locational Study that has the objective to identify the most suitable locations for VRE deployment in Pakistan to enable an informed strategic planning process of the imminent capacity ramp-up.
4. AEDB proactively engaged with World Bank for carrying out the Pakistan Renewable Energy Competitive Bidding Study that will provide strategic analysis and advice to the AEDB and other relevant sector agencies on the implementation of competitive bidding for the contracting of Renewable Energy (RE) capacity to achieve the 2025 and 2030 targets in line with the Alternative Renewable Energy (ARE) Policy 2019.
5. AEDB promoted the net metering concept and facilitated the concerned stakeholders in implementation Net Metering systems under NEPRA's regulations. During 2021-22, a total of 16,781 net metering based systems of 289.45 MW were installed. The total number of net metering based installations reached up to 29,872 with a capacity of 499.27 MW.
6. Carried out revision of AEDB (Certification) Regulations aimed to simplify the procedures laid therein in order to ensure the implement the present Government's policy of Ease of Doing Business.
7. Developed the RFP package after stakeholder consultation for carrying out competitive bidding amongst pipeline wind and solar projects.
8. AEDB assisted State Bank of Pakistan in revision of SBP's Financing Scheme for Renewable Energy in order to make financing available for broader consumer categories and swift implementation.
9. Assisted in carrying out the feasibility study and preparation of PC-I for conversion of grid operated tube wells to solar power in Balochistan.
10. Supported Government of Balochistan in preparation of PC-IIs for renewable energy based off-grid electrification projects in districts of southern Balochistan.

17. NATIONAL POWER PARKS MANAGEMENT COMPANY LTD (NPPMCL)

National Power Parks Management Company Ltd. (NPPMCL) was incorporated in 2015 under the Companies Ordinance, 1984 and is a wholly owned Company of the Government of Pakistan (GOP). The Company owns and operates two R-LNG based Combined Cycle Power Plants (CCPP), namely 1230 MW Haveli Bahadur Shah (HBS) and 1223 MW Balloki. Both plants are established under the Power Generation Policy, 2015.

The configuration of each of the Power Plant is 02 Nos. state of the art Frame 9HA.01 Gas Turbines of General Electric, manufactured in France, 02 Nos. HRSGs and 01 No. Alstom Steam Turbine are at the heart of the power plants making both of them the most efficient plants in Pakistan. Guaranteed Net thermal efficiencies, at reference site conditions, were 62.44% for HBS & 61.63% for Balloki which were achieved.

HBS and Balloki Complexes achieved Commercial Operation Dates (CODs) on May 9, 2018, and July 29, 2018, respectively. HBS power plant has successfully completed three years of commercial operation whereas Balloki power plant's 3rd commercial year will be completed in July-2021. Since commissioning till June 30, 2021, NPPMCL has exported approx. 44 Billion kWh to the National Grid.

Operational Statics and Key Performance Indicators:

Key Performance Indicator (FY 2020-21)	HBS	Balloki
Annual net energy export (GWh)	7,682	6,033
Annual demand from NPPC (GWh)	7,855	6,038
Annual Declared Capacity (GWh)	9,776	7,962
Annual Capacity Utilization Factor (%)	80.35	72.70
Annual Complex Availability (%)	95.92	80.80

Major Maintenance Activities:

Haveli Bahadur Shah Plant:

1. Half Complex (Gas Turbine#1) remained under schedule outage from March 29, 2021, to March 31, 2021, to carry out Borescope inspection.
2. Half Complex (Gas Turbine#1) remained under scheduled outage from December 19, 2020, to December 31, 2020, for Combustion Inspection and replacement of 1st stage Nozzles.
3. Half Complex (Gas Turbine#2) remained under scheduled outage from December 04, 2020, to December 08, 2020, to carry out Borescope inspection.
4. Inspection of HRSG-1&2 by the Boiler Inspector, Govt. of Punjab.

Balloki Power Plant:

1. Half Complex (Gas Turbine#1) remained on Scheduled Outage from October 30, 2020 to November 01, 2020 to carry out Borescope Inspection.
2. Half Complex (Gas Turbine#2) remained on Scheduled Outage from October 29, 2020 to November 02, 2020 to carry out Borescope Inspection.
3. GT-1 Hot Gas Path Inspection (HGPI) & Compressor Maintenance (Mar-Jun 2021).
4. Inspection of HRSG-1&2 by the Boiler Inspector, Govt. of Punjab.

18. POWER HOLDING LIMITED (PHL)

Power Holding Limited (PHL) is a special purpose vehicle with specific mandate of holding debt of power sector and is a provision of channel for servicing this debt. The company was initially incorporated as Private Limited Company however subsequent to issuance of Pakistan Energy Sukuk-I, status of company has been converted from Private Limited to Public Limited with effect from 01-04-2019. The company is wholly owned by the Government of Pakistan and is under the administrative control of Ministry of Energy (Power Division).

Tariffs notified by Government of Pakistan (GoP) do not cover cost of services delivered, high distribution and transmission losses and low revenue collection of distribution companies; hence power sector companies are facing financial problems. Moreover, an increase in thermal generation through furnace oil also added to the cost of generation which is not being fully recovered through tariff and even not covered in subsidy by Government of Pakistan (GoP). Keeping in view prevailing acute power shortage in the country, the Government of Pakistan (GoP) is determined to resolve this issue by taking short term and long term measures including resolution of circular debt, implementation of cost recovery tariff, reduction in transmission and distribution losses and improvement in recoveries.

Syndicated Term Finance Facility, have been executed pursuant to the approval of the Economic Coordination Committee (ECC) of the Cabinet and terms and conditions approved by the Finance Division. The disbursement receipts from these facilities were utilized for the purposes of funding of repayment liabilities of the DISCOs/ payments to the CPPA (G) for power sector payables repayment.

Summary of PHL financing facilities as at 30-06-2022

Sr. No.	Facility Nature	Facility Amount	Outstanding Amount	Tenor	Pricing	Disbursement Date	Responsibility
1	136.454 Bln STFF	136,454,200,000	102,340,650,000	5 Years	3MK+2 % (1 % rebate on payment within 30 days)	30-09-19	MoE (PD)
2	82.00 Bln PPTFCs	82,000,000,000	82,000,000,000	7 Years	6MK + 1.00%	10-09-12	MoE (PD)
3	30.95 Bln STFF	30,950,000,000	30,950,000,000	5 Years	6MK + 2.00% (1.00% rebate on payment within 30 days)	21-05-14	MoE (PD)

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4	25.00 Bln Islamic STFF	25,000,000, 000	16,666,666, 667	5 years	6MK + 2.00% (1.15% rebate on payment within 30 days	15-03-19	Finance Division
5	30.00 Bln (Islamic & Conventi onal)	30,000,000, 000	25,000,000, 000	5 Years	6MK + 2.00% (1.30% rebate on payment within 30 days)	20-12-19	MoE (PD)
6	41.00 Bln (Islamic & Conventi onal)	41,000,000, 000	41,000,000, 000	5 Years	6MK + 2.00% (1.30% rebate on payment within 30 days)	21-05- 2020	MoE (PD)
7	80.00 Bln STFF	80,000,000, 000	20,000,000, 000	5 Years	3MK + 2.00% (1.30% rebate on payment within 30 days)	30-03-18	MoE (PD) (Finance Division for interim six months)
8	50.00 Bln (A) STFF	50,000,000, 000	16,666,666, 667	5 Years	3MK + 2.00% (1.30% rebate on payment within 30 days)	04-05-18	MoE (PD) (Finance Division for interim six months)
9	50.00 Bln (B) STFF	50,000,000, 000	16,666,666, 667	5 Years	3MK + 2.00% (1.30% rebate on payment within 30 days)	30-05-18	MoE (PD) (Finance Division for interim six months)
10	35.806 Bln STFF	35,806,000, 000	17,903,000, 000	5 Years	3MK + 2.00% (1.00% rebate on	20-11-18	MoE (PD) (Finance Division for

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					payment within 30 days)		interim six months)
11	200.00 Bln PES I	200,000,000,000	200,000,000,000	10 Years	6MK + 2.00% (1.20% rebate on payment within 30 days)	01-03-19	MoE (PD)
12	41.457 Bln STFF	41,457,336,595	31,093,002,446	5 Years	3MK + 2.00% (1.00% rebate on payment within 30 days)	30-09-19	MoE (PD)
13	199.966 Bln PES I	199,966,800,000	199,966,800,000	10 Years	6MK - 0.10%	21-05-20	MoE (PD)
Total		1,002,634,336,595	800,253,452,446				

Despite financial constraints, the Company was able to perform its prime responsibility of holding the inter-corporate circular debt and executing the financing facilities from the banking system. During the year under review, PHL has paid Principal amounting to Rs. 129.747 billion and mark-up amounting to Rs. 72.068 billion. This was made possible mainly due to the truly dedicated efforts of small number of employees of PHL under the able guidance of the Board of Directors and support of Ministry of Energy (Power Division) and Ministry of Finance.

19. GENCO HOLDING COMPANY LIMITED

GENCO Holding Company Limited (the Company) is a public limited company incorporated in Pakistan on 9th February, 2012. The main objects of the Company is to improve performance of the public sector Thermal Generation Companies, which were created and incorporated through unbundling of Water and Power Development Authority (WAPDA) in 1999, hereinafter referred as GENCOs, by consolidating control of GENCOs in a single entity GHCL so that better corporate management, improved financial control and forward thinking business planning could be brought into the GENCOs:

1. Jamshoro Power Company Ltd. (GENCO-I),
2. Central Power Generation Company Ltd. (GENCO-II),
3. Northern Power Generation Company Ltd. (GENCO-III)
4. Lakhra Power Generation Company Ltd. (GENCO-IV)

The registered office of the Company is situated at first floor, Overseas Pakistanis Foundation Building, G-5/2, Islamabad and there is a liaison office at WAPDA House, Lahore.

The offices of General Manager Thermal Operations and General Manager Design & Development Thermal, which were initially established by WAPDA for operational management and development of new thermal power plants and after the unbundling of WAPDA by performing under the administrative control of the Pakistan Electric Power Company (Private) Limited (PEPCO), have been transferred to the Company on 10 April 2012.

In 2017, the Board of Directors of the Company resolved to act as Managing Agent of all GENCOs except GENCO IV through a resolution dated 12 April 2017 and authorized Chief Executive Officer to execute and deliver these agreements on the Company's behalf.

The Company is responsible to perform the following as a managing agent:

To liaise with GoP, particularly MoWP on behalf of GENCOs and to take necessary steps for implementation of the GoP policies with regards to GENCOs;

To act on behalf of GENCOs in all matters concerning the GENCOs relationship under any agreement or law with WAPDA, NTDCL, CPPA-G, DISCOs, IPPs and NEPRA on behalf of GENCOs, To manage the transfers and posting of GENCOs personnel including the transfers, secondment, or posting on deputation of personnel to or from the one GENCO to another or any other organization or department.

In order to cut down the operational & management expenditures and to reduce burden on electricity consumers, the Power Division has decided that all the GENCOs shall be merged / amalgamated with the GHCL. Pursuant to this merger the GENCOs shall operate as one company and the functions of Board of Directors of all the GENCOs will be transferred to the GHCL Board. The process of merger has been initiated by GHCL through hiring of professional consultants having expertise in financial, legal & human resources fields.

20. JAMSHORO POWER COMPANY LTD (JPCL) GENCO-I

Jamshoro Power Station (GENCO-I) is a thermal power plant fueled by natural gas and fuel oil located in Jamshoro near Hyderabad, Sindh in Pakistan. It is operated by the Jamshoro Power Company. It was commissioned between 1989 and 1991.

Operational Results during 2021-22

Unit No.	Make	Commissioning Date	Installed Capacity MW	Present Capacity MW	Fuel Type	Net Electrical Out During 2021-22 (Gwh)	Fuel Mix
Thermal Power Station Jamshoro							
ST-1	M/s FUJI Elect. Co. Japan	1990	250.00	182.45	F.Oil	146.463	100%
ST-2	M/s CMEC, China	1989	210.00	154.73	F.Oil	6.567	100%
					Gas	-	0%
					RLN G	-	0%
					Total	6.567	100%
ST-3	M/s CMEC, China	1990	210.00	155.36	F.Oil	38.492	100%
					Gas	-	0%
					RLN G	-	0%
					Total	38.492	100%
ST-4	M/s CMEC, China	1991	210.00	156.48	F.Oil	53.991	100%
					Gas	-	0%
					RLN G	-	0%
					Total	53.991	100%

Gas Turbine Power Station Kotri

Unit No.	Make	Commissioning Date	Installed Capacity MW	Present Capacity MW	Fuel Type	Net Electrical Out During 2021-22 (Gwh)	Fuel Mix
GT-3	M/S THOMSON HOLLAND	1979	25.00	18.00	Gas	-	NEPRA de-licensed GTPS Kotri w.e.f 13.02.2020
GT-4	M/S THOMSON HOLLAND	1979	25.00	18.00	Gas	-	
GT-5	M/S HITACHI Japan	1981	25.00	18.00	Gas	-	
GT-6	M/S HITACHI Japan	1981	25.00	18.00	Gas	-	
CCP-7	M/S HPEC China	1994	44.00	34.50	CCP	-	

Coal Power Project, Jamshoro

Unit No.	Make	Commissioning Date	Installed Capacity MW
Unit#5	Siemens, Germany & Harbin Electric International, China	Not Installed Yet	Work in Progress
Unit#5	Siemens, Germany & Harbin Electric International, China	Not Installed Yet	Contract Not Yet Awarded

Total JPCL FUEL-WISE GENERATION	Fuel Type	Net Electrical Out During 2021-22 (Gwh)	Fuel Mix
	F.Oil	245.513	100%
	Gas	-	0%
	RLNG	-	0%
	Total	245.513	100%

NEPRA Approved Capacity (MW)	649.02
Plant availability Factor FY 2021-22 (%)	90.25
Plant Average Loading FY 2021-22 (MW)	375
Utilization Factor on NEPRA Approved Capacity (%)	4.32

21. CENTRAL POWER GENERATION COMPANY LIMITED (CPGCL) GENCO-II

Guddu Thermal Power Station is the biggest Thermal Power Generation Complex of Pakistan in public sector and is located in the province of Sindh, having total installed capacity of 2402 MW. A total number of 16 Units are installed at this Complex.

Guddu Thermal Power Station is situated on the right bank of River Indus near Guddu Barrage, 10 km from Kahsmore in District Kashmore (Sindh). The nearest approaching airports are Rahimyar Khan at 85 km and Sukkur at 160 km. It is a confluence of three provinces i.e. Sindh, Punjab & Baluchistan.

Since Guddu is located in the Centre of NTDC transmission network, hence the Generating Units are connected with 132, 220 and 500 kV lines. These lines are also interlinked through Auto Transformers for free flow of power according to the load requirement. The transmission lines emanating from Power Station are as under:

2	x	500 kV	Multan
1	x	500 kV	Muzaffargarh
2	x	500 kV	Dadu
1	x	220 kV	Uch
1	x	220 kV	Shikarpur
1	x	220 kV	Sibbi
2	x	132 kV	Multan
1	x	132 kV	Rojhan
2	x	132 kV	Kashmore
1	x	132 kV	Daharki

The Electric Power is generated using indigenous Gas from Mari, & Kandh Kot and Furnace Oil (HSFO). Gas supply is made through Gas Mixing station which is located inside the 600 MW CCP. The average daily gas quota at present is 360 MMCFD, which is supplied through gas pipelines as under:

Mari	=	110 MMCFD
Kandh Kot – I, II & III	=	250 MMCF

Major Activities & Achievements:

1. Thermal Power Station Guddu shared 4,144 million kWh to the National Grid @ Rs.07~11 per kWh approximately, detail is given on Table-I.
2. Efficiency of the Units of TPS Guddu remained at par with the NEPRA approved benchmark, detail is given on Table-I.
3. Operation & Maintenance of 132kV, 220kV & 500kV Switchyard / Grid-Stations handed over to NTDC and Agreement signed on 30.09.2021.
4. Gas Turbine # 14 has been successfully restored, which was under fault, adding 370 MW cheaper generation @ Rs.07/kWh to the National Grid.
5. Open Cycle Operation of Gas Turbine has been restored, resultantly 250MW cheaper generation @ Rs.11~12 per kWh added to the National Grid.
6. In the light of CCoE decision dated 10.09.2020, Agreement with M/s. NESPAK signed for Consultancy services for restoration / revival of complete Block (GT-11, GT-12 & ST-13). On completion of the Project, 415MW most economical Generation @ Rs.08/kWh will be back on National Grid.

STATISTICAL DATA OF TPS GUDDU UNITS FOR THE YEAR 2021-22

Block	Unit	Net Derated Capacity (MW)	Net Generation (MkWh)	Max : Load (MW)	Availability factor (%)	Load factor (%)	Utilization factor (%)	Efficiency Actual / NEPRA (%)
I	11-13	390	148	95	28	18	7	28 / 27
II	5-10	530	1386	393	82	41	27	35 / 36
V	14-16	721	2610	600	57	51	41	54 / 54
Total		1,641	4,144					

22. NORTHERN POWER GENERATION COMPANY LIMITED (NPGCL) GENCO-III

Northern Power Generation Company Limited (NPGCL) consists of three Power Complexes- Thermal Power Station Muzaffargarh (TPS Muzaffargarh), Gas Turbine Power Station Faisalabad (GTPS) and CCPP Nandipur.

Main Activities at GENCO Thermal Power Plants include major overhauling of Turbine and Generator, Annual Boiler Inspection, Combustion Inspection of Gas Turbines and Condenser Cleaning. No substantial generation of electricity could be made from NPGCL Plants due to no demand from NPCC. However, machines remained available for generation in Standby mode.

THERMAL POWER STATION MUZAFFARGARH

Phase-I (Unit # 1, 2 and 3)

1. Repairing of ID Fan Ducts, Expansion Joints and Flue Gas Ducts of Unit No.1, 2&3 was carried out during Annual Boiler Inspection of the Units.
2. Overhauling of Condensate Pumps CP #1B, CP#2C & CP#3C was carried out.
3. Overhauling of Stator Cooling Pump 1B of Unit No.01 was carried out.
4. Overhauling of Tallery Tube Well#06 & Tube Well#13 was carried out.
5. Routine maintenance activities as per procedure stated in the maintenance manuals provided by the Original Equipment Manufacturers (OEMs).

Phase-II (Unit 5 & 6)

1. Routine maintenance activities as per procedure stated in the maintenance manuals provided by the Original Equipment Manufacturers (OEMs).

425 MW CCPP NANDI PUR

1. Major inspection of GTs carried out from 21st Jan to 6th March 2022.

GTPS FAISLABAD

1. Routine maintenance activities on Electrical and Mechanical Equipments carried out as per procedure stated in the maintenance manuals provided by the Original Equipment Manufacturers (OEMs).
2. Honeywell Control System's Power supplies and hard disk got damaged which were repaired and backup was created for smooth operation.

THERMAL POWER STATION MUZAFFARGARH

1. Net Generation of 276,313,935 KWH
2. Achieved Availability Factor 77.48 %

425 MW CCPP NANDI PUR

1. Net Generation of 1,648,608,000 KWH.
2. Achieved Availability Factor of 90.81 %.
3. Achieved NEPRA Approved Efficiency of 49 % (with compensation of part load and degradation Factor).

GTPS FAISLABAD

1. Net Generation of 97,822,000 KWH
2. Achieved Availability Factor 87.59 %.

All maintenance jobs at NPGCL were performed by local staff without any assistance of foreign expertise and the foreign exchange was thus saved.

Statistical Data

Name of Power Station	Net Generation (kwh)	Gas/ RLNG Cons. (MMCF)	Fuel oil Cons. (M.Tons)	Max Load (MW)	Availability Factor (%)	Efficiency Net (%)
2021-22						
TPS Muzaffargarh						
Unit # 1 to 6	217,878,529	0	61836	340 (Dated 06.04.2022)	82.713	28.624
GTPS Faisalabad						
Unit # 5 to 9	97,822,000	1119.195	0	85 (Dated 13.09.2021)	87.59	29.885
425 MW CCPP Nandipur						
GT # 1 to 3 & STG	1,648,608,000	13383.397	0	541 (Dated 28.10.2021)	90.81	48.34

23. LAKHRA POWER GENERATION COMPANY LTD (GENCO-IV)

The 150 MW FBC Power Plant, the sole Power Plant of Lakhra Power Generation Company, is under shutdown, since July 2017. A Feasibility Study was required to be done. LPGCL had worked out and finalized the firm through bidding process, to get the Feasibility Study done. The whole process was initiated and completed in the light of recommendations of the Senate's Standing Committee on Power and Power Division and subsequent directions of BOD LPGCL. Now the matter is under process of approval of PC-II at Power Division. Whereas, the BoD LPGCL, in its 70th meeting held on 24.02.2021, declared the case of Rehabilitation of Lakhra Power Plant as 'infructuous' in view of recent decision of Government regarding closure of certain Power Plants, including therein was the existing Lakhra Power Plant.

Simultaneously, on further recommendations of the Senate's Standing Committee on Power, LPGCL had also submitted, the Concept Clearance Paper for installation of new Coal Power Plant of 330 MW capacity on local coal at site of Lakhra Power Plant, to the Power Division, approval/disposal whereof is awaited.

Operational Results During 2021-22						
Unit No.	Make	Commissioning Date	Installed Capacity MW	Fuel Type	Net Electrical Out During 2021-22 (Gwh	Fuel Mix
Thermal Power Generation Lakhra						
ST-1	MS Dong Fang China	06-06-1995	50	Lignite Coal	Unit is under continuos shut down since July, 2017.	-
ST-2	MS Dong Fang China	14-10-1995	50	Lignite Coal		-
ST-3	MS Dong Fang China	03-01-1996	50	Lignite Coal		-
NEPRA Approved Capacity (2 * 31.2MW)						62.4
Plant availability Factor FY 2021-22 (%)						U/S/D
Plant Average Loading FY 2021-22 (MW)						U/S/D
Utilization Factor on NEPRA Approved Capacity (%)						U/S/D

24. POWER INFORMATION TECHNOLOGY COMPANY (PITC)

Power Information Technology Company (PITC) is the leading power sector IT company in Pakistan. It is mainly involved in all software development activities, including design, development, testing, documentation, implementation, and operation of developed applications. The Company is solely responsible to provide software support to ten (10) power distribution companies of Pakistan (DISCOs).

Journey from a true public sector entity to a modern corporatized business integrator has opened new horizons for us; dimensions like remote metering, SMS based services, mobile IT Resource Center, on-site billing, exploiting Internet power for customer care are just few examples. Over the decades, we have learnt that an effective implementation plan supported by innovative thinking, leads to the true realization of project objectives. PITC believes that the degree of success is limited only to our synergetic visualization.

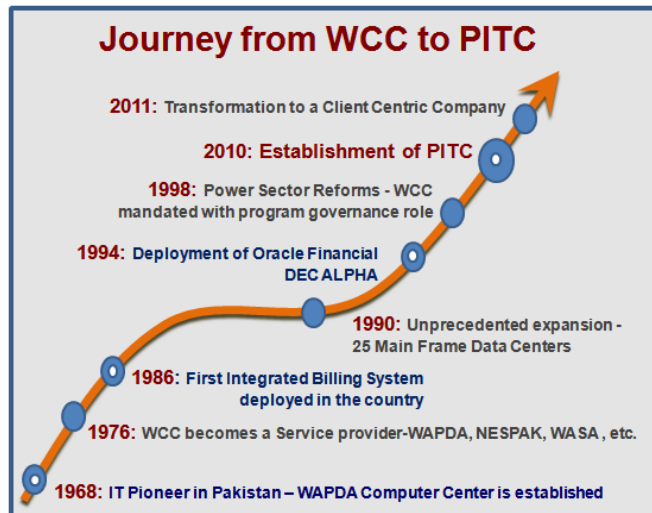
The major motivation visualized by PITC is the best customer care and adequate billing software support to all power distribution companies of country except KESC – PITC is managing this mandate through an in-house developed billing system. The system also has the capability to provide upto-date information to all stakeholders. In addition to billing and customer care system, PITC is also managing Management Information System, Line Losses System, Payroll and Store Management System, developed, and implemented all over WAPDA/PEPCO/DISCOs.

Additionally, PITC also provides technical consultancy, and other ICT support to various subsidiaries of PPMC and WAPDA. The Company has some of the latest hardware facilities at the disposal of a team comprising of highly qualified, skilled, and experienced human resource enthusiast to deliver and capitalize on its legacies.

Integrated Billing System (IBS) improvement:

Following improvements have been made in Integrated Billing System.

1. Cash and Division level workflows modelling.
2. Email and SMS alerts module.
3. Billing system integration for Bulk consumers.
4. Bill adjustment/Cash adjustment workflow.
5. Modelling and documentation of bill and cash adjustment workflows.



6. IBS v2 Single Database for all DISCOs IBS v2 Architecture and subjective feasibility study.
7. Database design restructure and documentation.
8. Helpdesk Ticketing System implementation for DISCOs.

Data and Information Analysis System for DISCOs, MoE and other Ministries

Data and information Analysis system for DISCOs, MoE and other Ministries has been prepared and implemented with following features:

1. Web-Based MND/MIS Reporting System Implementation
2. Web-Based Query builder for consumer profile.
3. Web-Based Database Admin Panel Module.
4. Ad-hoc Reporting of MND and Consumer Profile; The objective is to fulfill all requirement demanded by authority and DISCO
5. Month-End Data Management for all DISCOs: To build component wise MIS data as well as consumer wise data at different levels
6. Consumer Profile management for all DISCOs at consumer level for easy online access.
7. Performance monitoring dashboard: To project daily and monthly data of billing, receivable, payments, adjustments and losses etc.

Business Applications Suite Extension

Following extensions have been made in Business Application suite during the year 2021-22

1. Development of data entry forms (master, nominee, adjustments, settlements) in EPF
2. Development of board management system (BMS)
3. Development of store inventory system (SIS)
4. Implementation in QESCO and GEPCO

Implementation of IBS in SIE

PITC has successfully implemented IBS at Sunder Industrial Estate

Company Business Operational Activities (2021-22)

Following operational activities were successfully implemented:

1. AJK electricity department is in process of converting into a power distribution company. In order to streamline billing process in AJK Barqiat deptt. Govt of AJk has approached PITC for implementation of IBS in AJK. Keeping in view the data flow and organizational structure of Barqiat deptt., IBS has been modified.
2. IBS Development support to all DISCOs, AJKED and SIE
3. IBS Support for 10 DISCOs and AJKED
4. Federal Complaint Cell (FCC), DISCOs websites, PMDU, Payroll, EPF,
5. New Deployment of Payroll for WAPDA, TESCO, PESCO, FMS for TESCO
Development of EPF modules for field offices
6. LDI Support for LDI project to all DISCOs, AJKED and SIE
7. Operational Activity (System and Network Support)
8. CCMS Operations
9. Mobile Application Enhancement /Development
10. MND/MIS/Consumer Profile Deployment Support
11. MIS/MND Development Support for 10 DISCOs
12. Upgrading of hardware for MND and integration of central storage for all disco's, for reporting and archiving of historical data.
13. Installation of server machines
14. Installation of Storage and configuration
15. Provisioning of Network



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