



YEAR BOOK 2023-24



**MINISTRY OF ENERGY
POWER DIVISION**



**In the name of Allah,
the most Beneficent,
the most Merciful**

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PREFACE

The Year Book for the Year 2023-24 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 that 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

Keeping in view, the above requirement of the Rules of Business, the 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 the 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 the general public find it a valuable and substantial document relating to the Ministry of Energy (Power Division) and the 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 the newly created Ministry of Water Resources, and the Power Division was moved under the 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 23 public sector companies and 02 statutory bodies working under the Power Division. The power polices, power finance, operational matters pertaining to the above three functions, and administrative matters of Entities/ organizations are being dealt by the Power Finance, Corporate Affairs & 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 wings namely the 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 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.

Government is enhancing the power generation capacity of the country through private and public sector participation and has so far achieved considerable progress through successful commissioning of forty-six (46) multi-fuel based Independent Power Producers (IPPs) of 22,174 MW including hydropower, indigenous Thar coal, Gas/RLNG and Oil. In addition, a +660kV HVDC Matiari-Lahore transmission line project has also been commissioned through private sector investment. Moreover, fifty-four (54) Alternative and Renewable Energy (ARE) IPPs of 2,784 MW have also been commissioned. The cumulative capacity of afore-mentioned 100 IPPs reaches to 24,958 MW which represents 61% of the national grids capacity and has attracted over USD 33 billion as foreign direct investment.

Government has taken several supportive steps for deployment of net metering systems. As of May, 2024, the total capacity of net-metering based installations has reached up to 2187 MW which translates into 4.8% of the total utility scale grid connected power generation capacity of Pakistan.

I hope that 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.

(Sardar Awais Ahmed Khan Laghari)

Minister for Power Division

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



The Year Book 2023-24 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 2023-24 with the resolve that we will be able to eradicate the menace of the energy crisis.

In the modern world, energy plays a central role in the progress and prosperity of a nation. In this regard, the 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 an 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 2023-24.

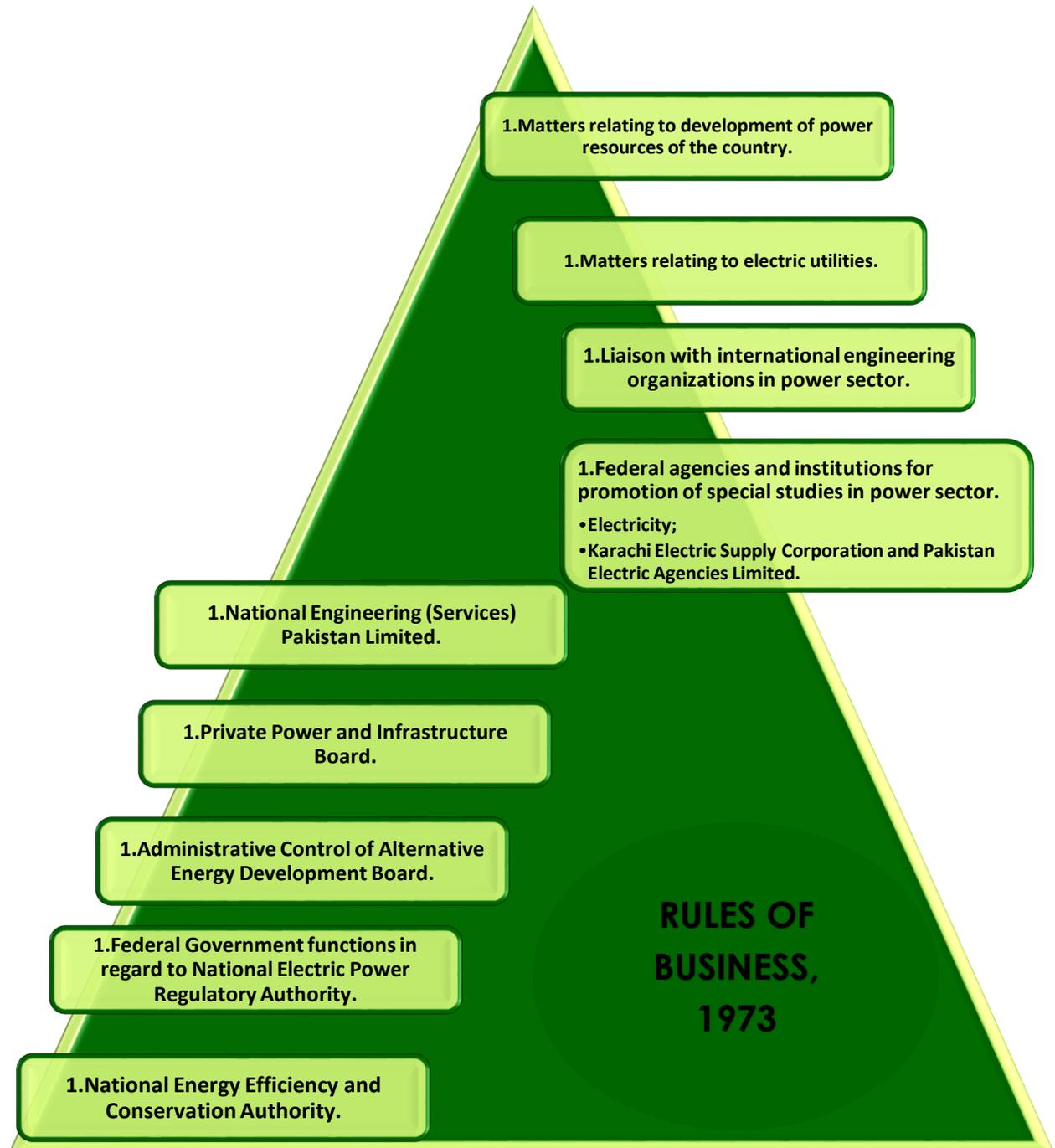
I hope that this Year Book will be a source of information in respect of Power Sector of Pakistan and will serve as a beneficial reference document.

(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:



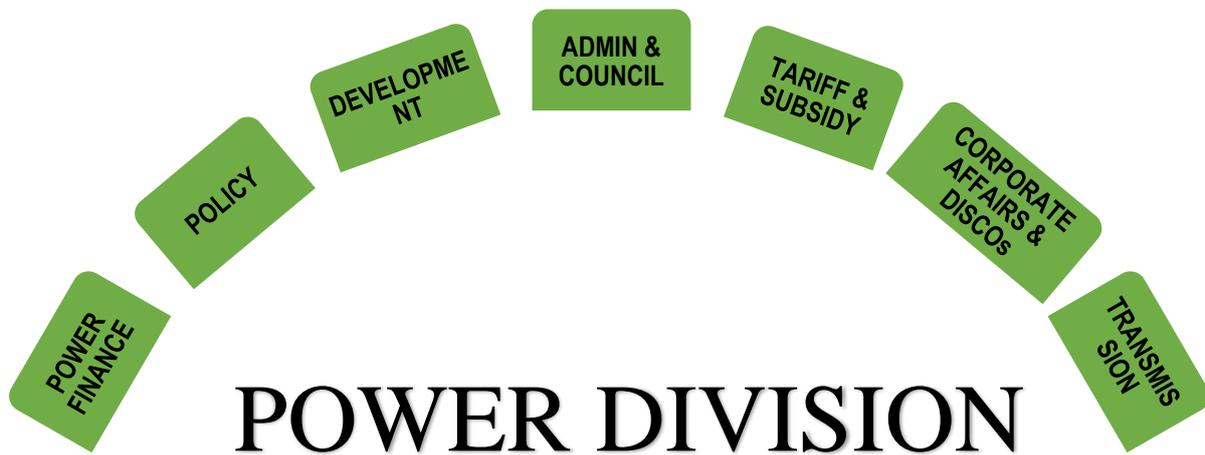
PROPOSED RULES OF BUSINESS

1. Matters relating to the development of power resources in the country including setting up of power generation, transmission and distribution through public and / or private sector.
2. Matters relating to national electricity policies for attaining energy security, affordability, sustainability and attracting / facilitating foreign direct investment in Pakistan in power sector.
3. Matters relating to national energy efficiency and conservation policies for institutionalizing energy efficiency, energy conservation in all sectors of economy.
4. Matters relating to development, monitoring and implementation of national electricity plans.
5. Matters relating to end-consumer tariffs, i.e notification / implementation, etc.
6. Matters relating to Pakistan's electricity market, i.e., Competitive Trading Bilateral Contract Market (CTBCM).
7. Liaison with local & international engineering organizations in power sector.
8. Coordination and liaison with Federal Agencies / Institutions for the promotion and development in power sector.
9. Matters (substantive and administrative) relating to State Owned Entities:
 - Central Power Purchasing Agency Guarantee Limited (CPPA-G)
 - National Transmission and Despatch Company (NTDC)
 - Power Planning & Monitoring Company (PPMC)
 - National Engineering Services Pakistan (NESPAK);
 - Power Information Technology Company (PITC)
 - All Distribution Companies (DISCOs)
 - GENCO Holding Company Limited (GHCL)
 - All Generation Companies (GENCOs)
 - Power Holding Limited (PHL)
10. Matters relating to:
 - Private Power and Infrastructure Board (PPIB);
 - National Energy Efficiency & Conservation Authority (NEECA);
 - K-Electric.

STRUCTURE OF POWER DIVISION

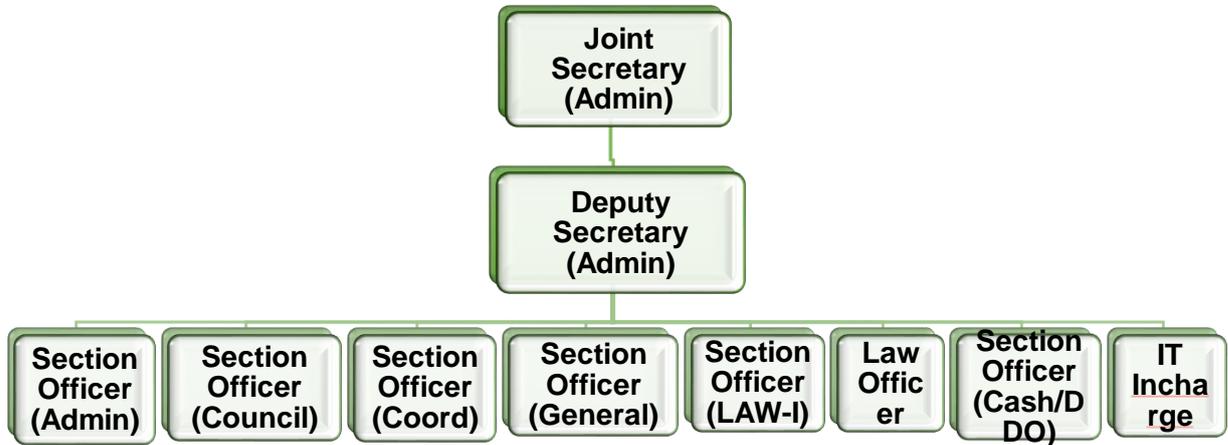
Power Division is headed by Secretary Power Division who is assisted by a Special Secretary and three Additional Secretaries. The functions of Power Division have been divided into seven Wings. Each Wing is headed by the Joint Secretary, details are given below:

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

All administrative matters related to Ministry of Energy (Power Division)

All General matters related Ministry of Energy (Power Division)

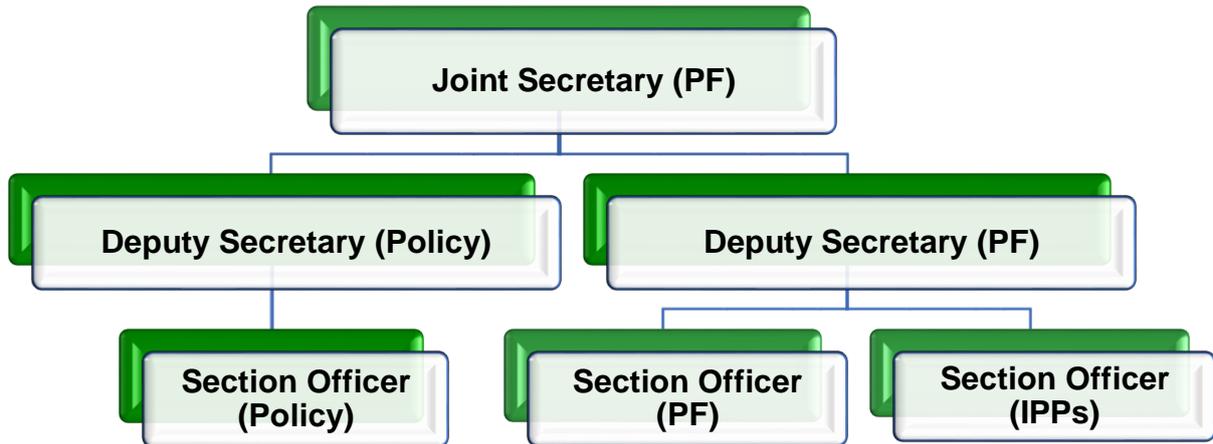
All matters related to training/Conventions/seminars local/foreign

Matters related to implementations status of Cabinet, ECC, CCoE, CCoP, CCLC, CCI, CCoCPEC, CCIR Decisions forwarded by Cabinet Division

All matters related to all Legal, Parliamentary, Council and Coordination

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

All matters related to Power Sector Finance

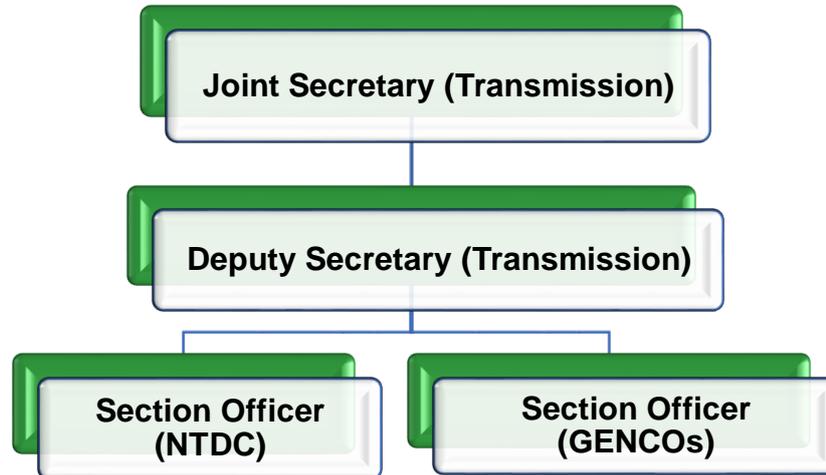
All Matters related to IPPs, PHL, CPPA-G

Matters related to NEPRA

All Matters related to Fuel Price Adjustment

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

All the matters related to Generation Companies (GENCO), NTDC and related matters, thereof

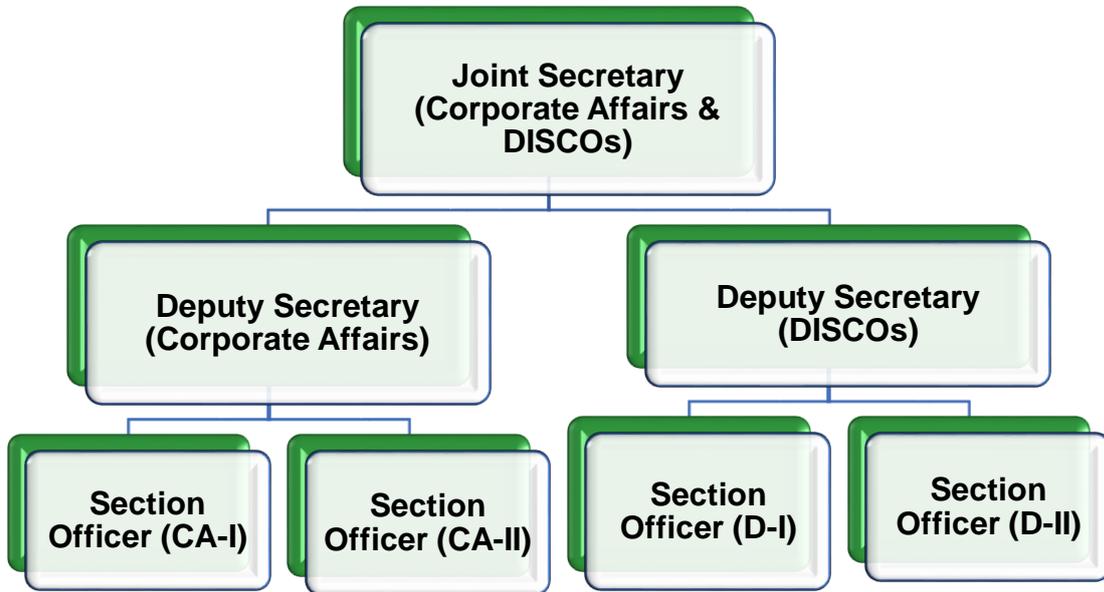
All matters related to Power projects/agreements in Public Sector

All the matters related to Independent Transmission Line and related matters, thereof

All matters related to the Prime Minister's directives on Energy Generation and Transmission

4. CORPORATE AFFAIRS AND DISCOs WING (CA & D WING)

Corporate Affairs and DISCOs Wing is headed by a Joint Secretary (CA&D) who is assisted by two Deputy Secretaries and four Section Officers.



Functions of Corporate Affairs and DISCOs Wing.

Matters related to Distribution Companies (DISCOs)

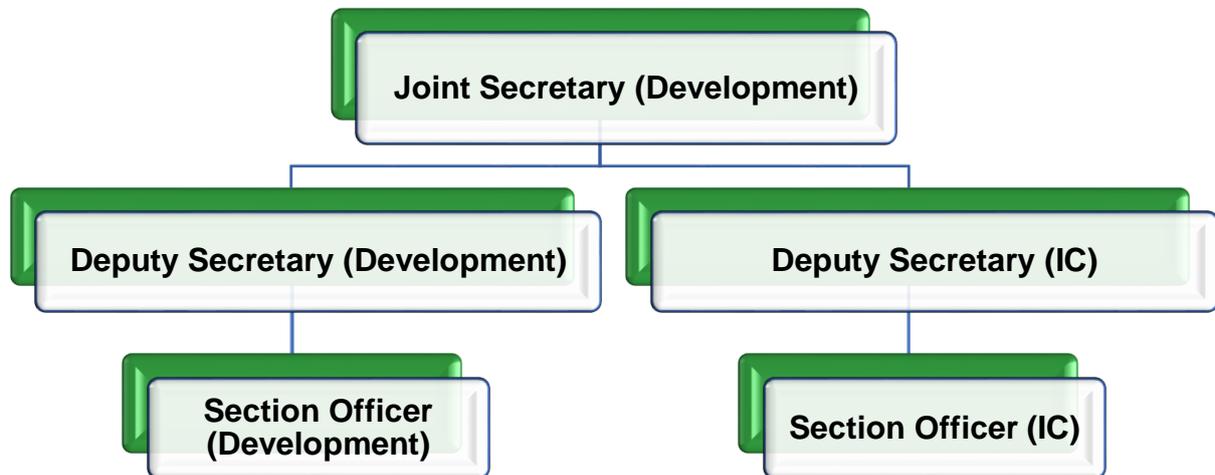
All the matters related to Entities (PPIB, NESPAK and NEECA)

All the matters related to PPMC

Any other task assigned by the Secretary

5. DEVELOPMENT WING (DEV WING)

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



Functions of Development Wing

All PSDP and special projects

All the projects pertaining to entities & DISCOs in Power Sector

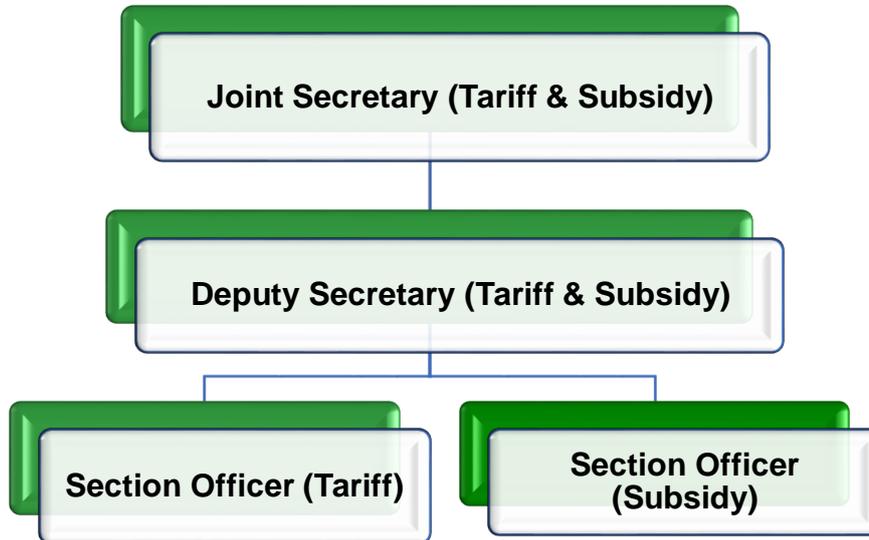
All matters relating to Donors

Project under PPPMCL, PQA

General matters relating to Development

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

All matters related to Subsidy

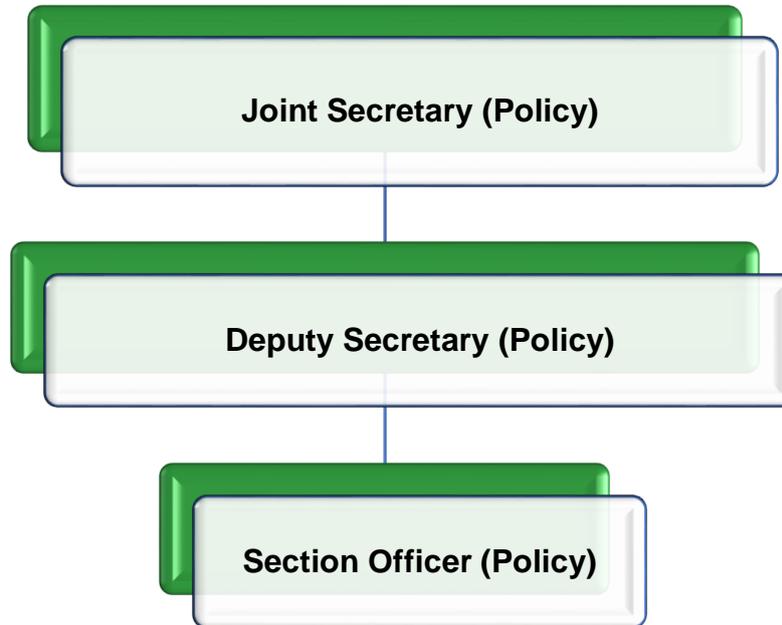
All Matters related to Tariff

All matters related to NEPRA regarding Tariff and Subsidy

All Matters related to Tariff Adjustment

7. POLICY WING (POLICY WING)

Tariff and Subsidy Wing is headed by Joint Secretary (Policy) who is assisted by one Deputy Secretary (Policy) and one Section Officer.



Functions of Policy Wing

Issues related to policy matters and circular debt reports.

Develops the Integrated Energy Plan.

Preparation of National Electricity Plan 2023–2027.

Frames CTBCM and Net Metering policies.

Matters pertaining to IMF



KEY HIGHLIGHTS OF THE YEAR

Ministry of Energy (Power Division), started a comprehensive theft campaign against the electricity thieves, defaulters and other culprits, who are damaging the power system in shape of overloading the system causing a huge financial loss to the nation. As an essential part of the anti-theft campaign, Power Division organizes daily meetings for the anti-theft campaign, which are presided over by the Secretary of the Ministry of Energy (Power Division). These meetings, attended by CEOs of DISCOs and other ministry officials, are crucial for strategizing and assessing the campaign's progress. The continuous, uninterrupted nature of these meetings highlights the campaign's importance and the commitment of all parties involved to achieving its goals. As per the latest data, a total of 177,030 FIRs have been registered during FY 2023-24, while 87,106 persons involved in theft were arrested. An amount to the tune of Rs. 7,221 million was recovered from the anti-theft campaign. Recovery is a cumbersome process. However, the Power Division has assigned a target to DISCOs to recover the current bills and arrears as well. DISCOs have collected an amount of Rs. 3,845,745 million. Also, the awareness campaign through print, electronic and social media against the anti-theft drive has resulted in a visible decline in the incidents of electricity theft. To increase the base of

electricity consumers, a total of 1,879,827 new connections were installed during FY 2023-24. This expansion has been facilitated by efficient planning, technological advancements, timely procurement and enhanced consumer engagement.

Installation of the Advanced Metering Infrastructure (AMI) meters in DISCOs on all transformers with highest AT&C Loss, industrial & commercial, bulk consumers and one-point supply. As per AMI Roll out plan in DISCOs, 1,064,448 AMI meters are to be installed till June-2025. Aerial Bundled Cable (ABC) is another project to control and preempt illegal connections through direct hooking thereby controlling the menace of kundas and reducing line losses in high losses areas. Installation of Asset Performance Monitoring System (APMS) has been initiated on distribution transformers for:

- i) Real-time control
- ii) Energy audit
- iii) Theft control
- iv) Targeted commercial load-shedding
- v) Protect the transformer against overloads and short circuits.

Ministry of Energy (Power Division), has enhanced power generation capacity of country through private and public sector participation, and has so far achieved considerable progress through successful commissioning of forty-six (46) multi-fuel based Independent Power Producers (IPPs) of 22,174 MW including hydropower, indigenous Thar coal, Gas/RLNG and Oil. In addition, a +660kV HVDC Matiari-Lahore transmission line project has also been commissioned through private sector investment through PPIB. Moreover, fifty-four (54) Alternative and Renewable Energy (ARE) IPPs of 2,784 MW have also been commissioned. The cumulative capacity of afore-mentioned 100 IPPs reaches to 24,958 MW, which represents 61% of the national grids capacity and has attracted over USD 33 billion as foreign direct investment.

Ministry of Energy (Power Division), is continuously striving hard and has taken substantial steps to institutionalize and implement all the possible EE&C measures in the country including formulation and approval by the Federal Cabinet of the following:

- National Energy Efficiency and Conservation (NEEC) Policy 2023;
- National Energy Efficiency and Conservation (NEEC) Action Plan 2023-2030;
- Minimum Energy Performance Standards (MEPS) and Star Rating Labeling Regime for Fans, Refrigerators, Air Conditioners, Motors and LED Lamps;
- Energy Conservation Building Code (ECBC) 2023.

Energy sector has become a conundrum faced with challenges of high prices, peak demand, and circular debt which is often addressed through change in tariff regimes. Seasonally, in peak summer days there has been a shortage of electricity, whereas in peak winter days country faces gas shortages. For the rest of the year, the demand and supply remain mostly stable, however, capacity additions result in capacity payments in power sector. The demand-side management through EE&C measures can be a silver bullet for peak shaving. Similarly, the integration of EE&C measures in different sectors of the economy can be instrumental to achieving sustainability goals. As per Business-as-Usual scenario, the primary energy supply

of Pakistan is expected to be 116 MTOE by 2030. However, the implementation of national energy efficiency and conservation policy sets the saving target of 9 MTOE, with reduction in the GHG emissions by 35 MTCO_{2e}. The National Energy Efficiency and Conservation Policy 2023 identifies mechanisms to ensure deep-rooted institutionalization, operationalization, and implementation of EE&C in all the economic sectors of the country including Power Sector. In the NEEC Action Plan, 29 priority actions have been defined across different sectors of the economy including Power Sector. The Action Plan is also projected to achieve savings of 9 Mtoe cumulatively by 2030, for which 8 billion USD of investment potential has been mapped. The cumulative financial savings by 2030 will be 6.4 billion USD at 2022 prices, where the effect of certain savings will continue through to 2050 in terms of economic transition towards net-zero emissions.

Ministry of Energy (Power Division), has developed and notified Energy Labelling regime through Pakistan Energy Label Regulations 2023 for five (5) electrical appliances namely Fans, Room Air Conditioners, Household Refrigerators, Motors, and LED Light. These regulations specify Minimum Energy Performance Standard (MEPS) and star rating based energy performance labelling. Upon successful implementation as per NEEC Action Plan, this labelling regime for five electrical appliances has potential to save 498 Million USD per year.

Ministry of Energy (Power Division), has developed the ECBC-2023 through the revision of the Building Code of Pakistan (Energy Provisions-2011) to incorporate State of the art technology for implementation of EE&C measure. The ECBC-2023 sets out minimum requirements for energy efficient design and energy conservation techniques for construction of buildings, as well as for the energy efficient operation of building systems and equipment.

The ECBC-2023 offers energy efficient building designs, use of energy efficient appliances, renewable energy, retrofitting of the existing buildings, support to e-mobility and monitoring systems. The implementation of ECBC-2023 can bring a significant reduction (15-40%) in electricity consumption of our building sector and to achieve the net zero emission targets to mitigate the carbon footprints.

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	18
2	Economic Coordination Committee (ECC)	19
3	Cabinet Committee on Energy (CCoE)	9
4	Cabinet Committee on Privatization (CCoP)	1

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5	Cabinet Committee for disposal of Legislative Cases (CCLC)	1
6	Cabinet Committee on State Owned Enterprises (CCoSOE)	1
TOTAL		49

b. Court Cases:

Detail of Court Cases disposed and processed during FY 2023-24 are given below:

Sr / No	Court / Departments	No of Cases Disposed / Processed
1	Islamabad High Court	15
2	Lahore High Court	40
3	Sindh High Court	50
4	Peshawar High Court	20
5	Balochistan High Court	6
6	Other Courts / Tribunals	110
7	Pakistan Information Commission (PIC) Islamabad	5
8	Ministry of Law and Justice Division for nomination of Advocates on Panel	30
9	Wafaqi Mohtasib, Islamabad	1
TOTAL		277

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	30	15
2	Questions / Answers	140	280
3	Motions	10	20
4	Resolutions	05	12
5	Calling Attention Notice	13	16

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6	Budget Cut Motions	-	180
7	Bills	01	01

d. Federal Complaint Cell (Power Division):

Federal Complaint Cell has been reactivated since June 2015 with a basic aim to address the Public complaints as the DISCOs response on the complaints was not satisfactory.

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:

Online System.

By Telephone.

3. 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, **459881** complaints have been lodged through online system out of which **458220** have been resolved.

FCC Complaints				
From 01 July 2023 to 30 June 2024				
Sr. No.	DISCO	Total	Redressed	In Process
1	LESCO	7706	7664	0
2	GEPCO	1520	1518	2
3	FESCO	4542	4541	0
4	IESCO	6369	6326	0
5	MEPCO	27024	25526	0
6	PESCO	1811	1811	0
7	HESCO	1990	1928	91
8	SEPCO	1331	1322	2

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9	QESCO	535	531	0
10	TESCO	2	2	0
Total		52830	51169	1661

e. Customer Complaint Management System (CCMS).

- f. As per directions of the Ministry of Energy (Power Division) to facilitate valuable customers, a Customer Complaint Management System based on the world's best practices and latest Information and Communication Technology (ICT) solution has been implemented since 01 May 2018.
- g. 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 web portal etc.) by introducing a prompt reply/action in order to provide excellent customer support. Since 01 May 2018, **9461124** complaints have been lodged through the online system out of which **9440357** have been resolved

Customer Complaint Management System (CCMS).

Sr/No	DISCOs	CCM Complaints From 01 July 2023 to 30 June 2024		
		Total Complaints	Resolved Complaints	In Process Complaints
1.	LESCO	831923	830106	1817
2.	GEPCO	354922	354695	227
3.	FESCO	344142	343244	898
4.	IESCO	299942	298868	1074
5.	MEPCO	504663	488334	16329
6.	PESCO	30449	30327	122
7.	HESCO	55422	55201	221

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8.	SEPCO	14835	14808	27
9.	QESCO	8182	8130	52
10.	TESCO	5	5	0
Total		2444485	2423718	20767

h. 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, **8102** complaints have been lodged and out of which **8012** have been resolved

Written Complaints Status From 01 July 2023 to 30 June 2024				
Sr/No.	DISCO	Total	Redressed	In Process
1	LESCO	120	111	9
2	GEPCO	95	82	13
3	FESCO	84	81	3
4	IESCO	134	111	23
5	MEPCO	282	270	12
6	PESCO	89	75	14
7	HESCO	98	89	9
8	SEPCO	85	82	3
9	QESCO	10	6	4
10	TESCO	2	2	0

Total	999	909	90
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**i. 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 **671383** complaints related to Power Sector have registered and out of which **669663** have been resolved.

Sr #	Officer	Total Complaints	New	In-progress	Resolved
1	Chairman,(PPMC)	4641	48	1	4592
2	MD, (PPMC)	1137	1	0	1136
3	CEO GENCO	798	3	0	795
4	CEO CPPA	75	0	0	75
5	MD PPIB	76	1	2	73
6	CEO(AEDB)	228	1	1	226
7	MD NTDC	2536	66	7	2463
8	MD Nespak	519	0	0	519
9	MD NEECA	43	0	0	43
10	CEO (PITC)	252	2	2	248
11	CEO (NPPMCL)	10	0	0	10
12	GM NPCC	5	0	0	5
13	JS–(PF)	86	21	0	65
14	JS –(Admin)	38	0	0	38
15	JS (Transmission)	1	0	0	1
16	JS (DISCO & Entities)	102	0	0	102
17	JS (Development)	1	1	0	0
18	CEO, IESCO	89971	81	3	89887
19	CEO, QESCO	8753	2	39	8712

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20	CEO, PESCO	85525	301	61	85163
21	CEO, HESCO	58604	3	168	58433
22	CEO, GEPCO	50116	120	3	49993
23	CEO, SEPCO	38012	14	77	37921
24	CEO, LESCO	121270	323	8	120939
25	CEO, MEPCO	124744	254	9	124481
26	CEO, FESCO	81863	87	10	81766
27	CEO, TESCO	1977	0	0	1977
TOTAL		671383	1329	391	669663

ATTACHED ORGANIZATIONS/ENTITIES

Power Division has 25 Organizations and Entities under its control. A 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. Hazara Electric Supply Company (HAZECO), Peshawar.
13. National Transmission & Despatch Company Limited (NTDCL), Lahore.
14. Private Power & Infrastructure Board (PPIB), Islamabad.
15. National Engineering Services Pakistan (NESPAK), Lahore.
16. Central Power Purchasing Agency Guarantee (CPPAG), Islamabad.
17. National Power Park Management Company Limited (NPPMCL), Lahore.
18. Power Holding Limited (PHL), Islamabad.
19. National Energy Efficiency and Conservation Authority, NEECA, Islamabad.
20. GENCO, Holdings Company (GHCL), Islamabad.
21. Jamshoro Power Generation Company, (JPCL / GENCO-I), Jamshoro.
22. Central Power Generation Company Limited, (CPGCL / GENCO-II), Guddu.
23. Northern Power Generation Company Limited, (NPGCL / GENCO-III), Muzaffargarh.
24. Lakhra Power Generation Company Limited, (LPGCL / GENCO-IV), Jamshoro
25. Power Information Technology Company (PITC), Lahore.

1. POWER PLANNING AND MONITORING COMPANY (PPMC) AND DISTRIBUTION COMPANIES (DISCOs)

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.

• Transmission & Distribution Losses:

T&D Losses						
Jul-Jun 2024			Jul-Jun 2023			Inc./ Dec.
Units Purchased (MkWh)	Units Billed (MkWh)	%age Losses	Units Purchased (MkWh)	Units Billed (MkWh)	%age Losses	
115,865	94,683	18.28	116,991	97,338	16.80	1.48

• Recovery %age against Computed Billing (All Consumers)

Recovery %age against Computed Billing (Without Subsidy All Consumer)								
Jul-Jun 2024			Jul-Jun 2023			Inc./Dec. w.r.t previous year		
Billing	Collectio n	%age Recove ry	Billing	Collecti on	%age Recove ry	Billi ng	Collectio n	% age
(Rs. In Millions)			(Rs. In Millions)					
4,081,359	3,845,745	94.23	3,090,546	2,906,539	94.05	990,813	939.206	0.18

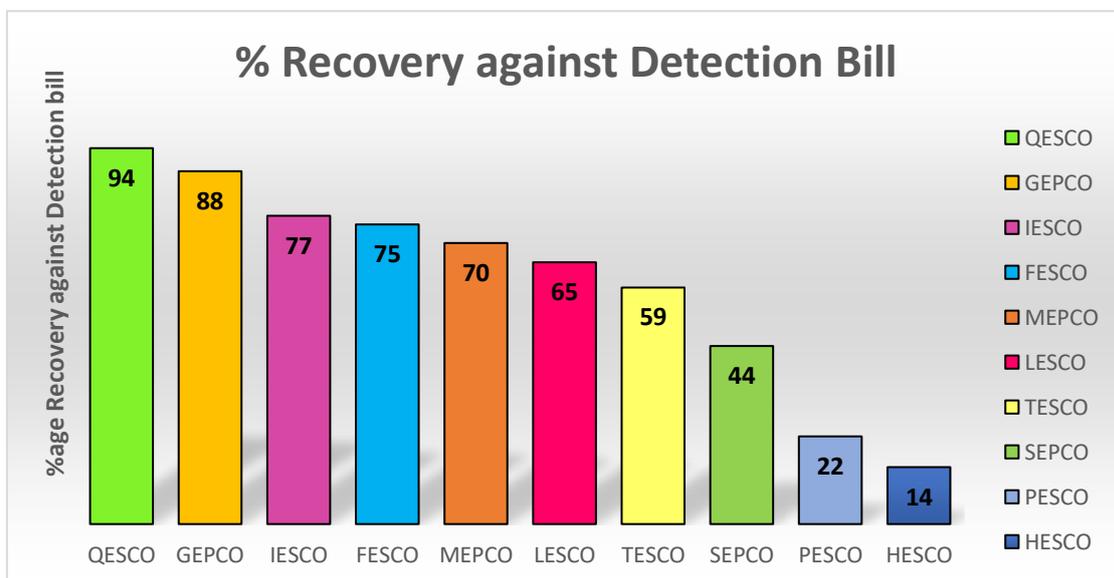
• **Recovery %age against Computed Billing (private Consumers)**

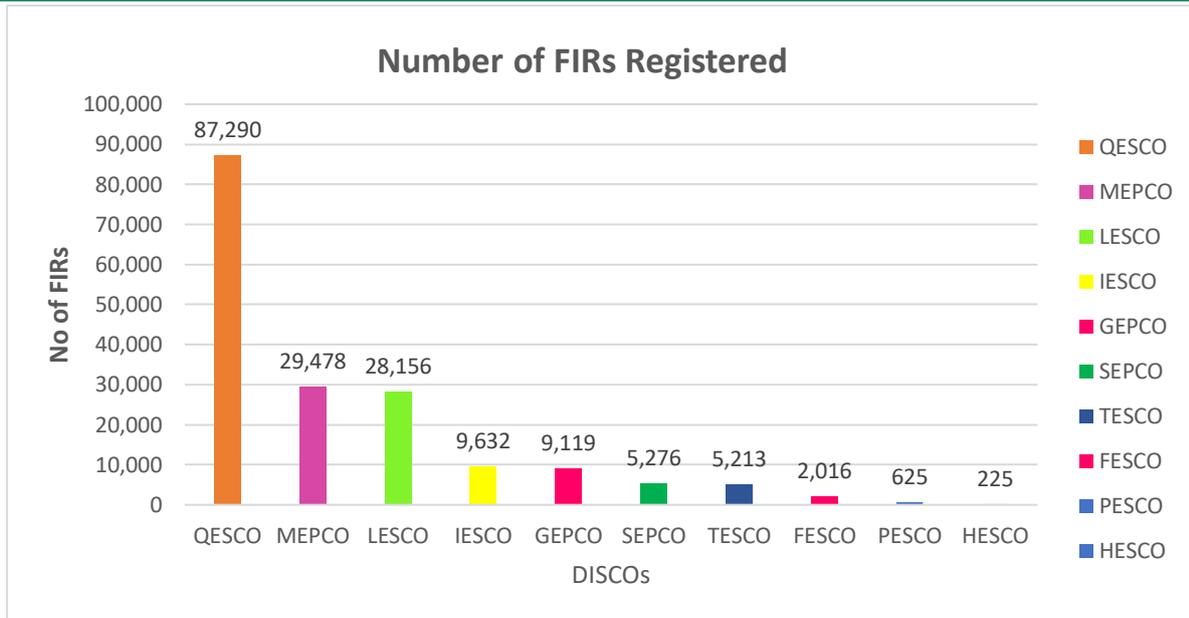
Recovery %age against Computed Billing (Without Subsidy Private Consumers)								
Jul-Jun 2024			Jul-Jun 2023			Inc./Dec. w.r.t previous year		
Billing	Collection	%age Recovery	Billing	Collection	%age Recovery	Billing	Collection	% age
(Rs. In Millions)			(Rs. In Millions)					
3,645,136	3,452,000	94.70	2,763,564	2,561,860	92.70	881,572	890,140	2.00

• **AT&C losses (All consumers)**

%age AT & C Losses (Computed recovery without subsidy of All Consumers)		
Jul-Jun 2024	Jul-Jun 2023	Inc./Dec.
23.00	21.75	1.25

• **Anti-theft drive (01.07.2023 to 30.06.2024)**





The detail of the Anti-theft drive for the FY 2023-24 is as under:-

Name of company	Number of FIRs 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	87,290	34,836	111.73	4,037.73	2,634.31	65.24
GEPCO	9,119	6,870	13.76	567.70	499.20	87.93
FESCO	9,632	7,907	22.91	1,006.59	751.62	74.67
IESCO	2,016	1,561	13.71	636.39	488.91	76.83
MEPCO	29,478	25,330	47.63	1,877.05	1,314.77	70.04
PESCO	28,156	9,065	57.97	2,301.64	502.92	21.85
HESCO	5,213	217	39.90	1,140.66	161.90	14.19
SEPCO	5,276	1,098	13.37	448.37	198.93	44.37
QESCO	625	204	13.38	693.69	649.76	93.67
TESCO	225	18	0.75	32.34	19.06	58.94
Total	177,030	87,106	335.10	12,742.16	7,221.40	56.67

PITC portal (Data retrieved on 06-08-2024)

- **New Connections Installed during 2023-24**

Nos. 1,879,827

- **Number of defective meters replaced during 2023-24**

Single Phase: Nos. 2,130,255

3-Phase: Nos. 315,677

- **Number of transformers installed during 2023-24**

Nos. 15,942

MVA 1,131

- **HT & LT lines added during 2023-24**

HT (km) 4,786

LT (km) 1,140

- **Number of Villages Electrified during 2023-24**

9,855 Nos

2. PESHAWAR ELECTRIC SUPPLY COMPANY (PESCO)/HAZARA ELECTRIC POWER COMPANY (HAZECO)

Peshawar Electric Supply Company (PESCO) is a public sector company which was incorporated in 1998 after the unbundling of Water And Power Development Authority (WAPDA). It is headquartered in Peshawar and provides service of electricity distribution to over 4.3 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 has been restructured and bifurcated into PESCO and HAZECO (DISCO for Hazara-I and Hazara -II circles).

HR OVERVIEW		
Sr. No.	Categories	Working Strength
1.	Officers	449
2.	Officials	11,409
Total		11,858

TECHNICAL OVERVIEW (ENDING JUNE-2024)	
Parameters	ENDING JUNE-2024 (Progress Achieved)
New Grid Stations	01
New Connections	175,814
AMR Meters Installed	11,572
Theft Cases	338,000
No. of HT Proposals	64
No. of LT Proposals	1033
No. of Villages Electrified	2529

CAPEX BUDGET		
DESCRIPTION	Budget 2022-23 (Rs. Million)	Budget 2023-24 (Rs. Million)
Distribution of Power (DOP)	1,502	1,522
Energy Loss Reduction (ELR)	2,618	2,710

Year Book 2023-2024

8th Secondary Transmission & Grids (STG)	7,289	5,452
Deposit Works	5,666	6,240
Other	4,897	2,555
Total	21,972	18,479

EXPENDITURE ON INFRASTRUCTURE DEVELOPMENT

PROJECT	FY 2022-23 (Rs. Million)	FY 2023-24 (Rs. Million)	Total (Rs. Million)
STG	5,042	3,998	9,040
ELR	2,738	2,586	5,324
DOP	1,513	1,571	3,084
Total	9,293	8,155	17,448

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

HR OVERVIEW		
Sr. No.	Categories	Working Strength
1.	Officers	433
2.	Officials	10,771
Total		11,204

TECHNICAL OVERVIEW (ENDING JUNE-2024)	
Parameters	ENDING JUNE-2024 (Progress Achieved)
New Grid Stations	01
New Connections	191,764
AMR Meters Installed	86,200
Theft Cases	2,178
No. of HT Proposals	55
No. of LT Proposals	1,431
No. of Village Electrified	460

CAPEX BUDGET		
DESCRIPTION	Budget 2022-23 (Rs. Million)	Budget 2023-24 (Rs. Million)
Distribution of Power (DOP)	4,049	3,810
Energy Loss Reduction (ELR)	2,960	2,902
8 th Secondary Transmission & Grids (STG)	8,090	8,793

Year Book 2023-2024

Deposit Works	8,738	10,259
Other	4,673	11,863
Total	28,510	37,627

EXPENDITURE ON INFRASTRUCTURE DEVELOPMENT

PROJECT	FY 2022-23 (Rs. Million)	FY 2023-24 (Rs. Million)	Total (Rs. Million)
STG	891	2,687	3,578
ELR	3,566	3,275	6,841
DOP	2,147	2,920	5,067
Total	6,604	8,882	15,486

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

HR OVERVIEW		
Sr. No.	Categories	Working Strength
1.	Officers	367
2.	Officials	10,976
Total		11,343

TECHNICAL OVERVIEW (ENDING JUNE-2024)	
Parameters	ENDING JUNE-2024 (Progress Achieved)
New Grid Stations	1
New Connections	317,365
AMR Meters Installed	61,530
Theft Cases	10,420
No. of HT Proposals	42
No. of LT Proposals	1,131
No. of Village Electrified	263

CAPEX BUDGET		
DESCRIPTION	Budget 2022-23 (Rs. Million)	Budget 2023-24 (Rs. Million)
Distribution of Power (DOP)	1,800	2,520
Energy Loss Reduction (ELR)	2,830	3,185

Year Book 2023-2024

8th Secondary Transmission & Grids (STG)	5,252	6,831
Deposit Works	6,105	7,561
Other	2,565	4,054
Total	18,552	24,151

EXPENDITURE ON INFRASTRUCTURE DEVELOPMENT

PROJECT	FY 2022-23 (Rs. Million)	FY 2023-24 (Rs. Million)	Total (Rs. Million)
STG	3,053	4,170	7,223
ELR	2,232	3,973	6,205
DOP	1,255	1,721	2,976
Total	6,540	9,864	16,404

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, Sheikhpura, 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 distribution system works via 132 & 66KV sub-transmission lines, sub-stations, and 11KV & 440V low tension lines with distribution transformers that deliver electricity. Lahore Electric Power Company (LESCO) is governed by Board of Directors which includes a blend of very experienced persons from Government and private sector.

HR OVERVIEW		
Sr. No.	Categories	Working Strength
1.	Officers	616
2.	Officials	18,977
Total		19,593

TECHNICAL OVERVIEW (ENDING JUNE-2024)	
Parameters	ENDING JUNE-2024 (Progress Achieved)
New Grid Stations	02
New Connections	412,629
AMR Meters Installed	33,250
Theft Cases	56,412
No. of HT Proposals	145
No. of LT Proposals	1,971
No. of Village Electrified	450

CAPEX BUDGET		
DESCRIPTION	Budget 2022-23 (Rs. Million)	Budget 2023-24 (Rs. Million)
Distribution of Power (DOP)	773	672
Energy Loss Reduction (ELR)	3,705	3,187

Year Book 2023-2024

8th Secondary Transmission & Grids (STG)	5,445	4,999
Deposit Works	12,638	11,387
Other	2,608	3,610
Total	25,169	23,855

EXPENDITURE ON INFRASTRUCTURE DEVELOPMENT

PROJECT	FY 2022-23 (Rs. Million)	FY 2023-24 (Rs. Million)	Total (Rs. Million)
STG	3,545	4,254	7,799
ELR	2,754	2,742	5,496
DOP	414	512	926
Total	6,713	7,508	14,221

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

HR OVERVIEW		
Sr. No.	Categories	Working Strength
1.	465	367
2.	12,875	10,976
Total		13,340

TECHNICAL OVERVIEW (ENDING JUNE-2024)	
Parameters	ENDING JUNE-2024 (Progress Achieved)
New Grid Stations	02
New Connections	285,797
AMR Meters Installed	11,327
Theft Cases	10,428
No. of HT Proposals	53
No. of LT Proposals	1,376
No. of Village Electrified	1,148

CAPEX BUDGET		
DESCRIPTION	Budget 2022-23 (Rs. Million)	Budget 2023-24 (Rs. Million)
Distribution of Power (DOP)	3,445	6,092.162
Energy Loss Reduction	3,806	4,479.900

Year Book 2023-2024

(ELR)		
8th Secondary Transmission & Grids (STG)	4,750	6,076
Deposit Works	4,375	4,468
Other	14,851	11,451
Total	31,227	32,567

EXPENDITURE ON INFRASTRUCTURE DEVELOPMENT

PROJECT	FY 2022-23 (Rs. Million)	FY 2023-24 (Rs. Million)	Total (Rs. Million)
STG	6,079	3,027	9,107
ELR	3,841	5,260	9,102
DOP	2,445	3,716	6,161
Total	12,367	12,005	24,372

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 distribution system works via 132 & 66KV sub-transmission lines, sub-stations, and 11KV & 440V low tension lines with distribution transformers that deliver electricity. Multan Electric Power Company (MEPCO) is governed by Board of Directors which includes a blend of very experienced persons from Government and private sector

HR OVERVIEW		
Sr. No.	Categories	Working Strength
1.	Officers	506
2.	Officials	13,595
Total		14,101

TECHNICAL OVERVIEW (ENDING JUNE-2024)	
Parameters	ENDING JUNE-2024 (Progress Achieved)
New Grid Stations	02
New Connections	441,133
AMR Meters Installed	69,324
Theft Cases	32,278
No. of HT Proposals	111
No. of LT Proposals	460
No. of Village Electrified	1923

CAPEX BUDGET		
DESCRIPTION	Budget 2022-23 (Rs. Million)	Budget 2023-24 (Rs. Million)
Distribution of Power (DOP)	2,127	2,000
Energy Loss Reduction (ELR)	3,346	6,600

Year Book 2023-2024

8th Secondary Transmission & Grids (STG)	-	-
Deposit Works	4,393	10,260
Other	-	-
Total	9,866	18,860

EXPENDITURE ON INFRASTRUCTURE DEVELOPMENT

PROJECT	FY 2022-23 (Rs. Million)	FY 2023-24 (Rs. Million)	Total (Rs. Million)
STG	1,622	1,738	3,360
ELR	3,273	5,058	8,331
DOP	1,799	1,283	3,082
Total	6,694	8,079	14,773

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

HR OVERVIEW		
Sr. No.	Categories	Working Strength
1.	Officers	204
2.	Officials	5,957
Total		6,161

TECHNICAL OVERVIEW (ENDING JUNE-2024)	
Parameters	ENDING JUNE-2024 (Progress Achieved)
New Grid Stations	-
New Connections	317,365
AMR Meters Installed	61,530
Theft Cases	-
No. of HT Proposals	42
No. of LT Proposals	1,131
No. of Village Electrified	47

CAPEX BUDGET		
DESCRIPTION	Budget 2022-23 (Rs. Million)	Budget 2023-24 (Rs. Million)
Distribution of Power (DOP)	1,099	1,232
Energy Loss Reduction (ELR)	1,562	1,654

Year Book 2023-2024

8th Secondary Transmission & Grids (STG)	2,620	3,098
Deposit Works	539	604
Other	3,244	4,366
Total	9,064	10,954

EXPENDITURE ON INFRASTRUCTURE DEVELOPMENT

PROJECT	FY 2022-23 (Rs. Million)	FY 2023-24 (Rs. Million)	Total (Rs. Million)
STG	1,448	1,836	3,284
ELR	109	387	496
DOP	111	226	337
Total	1,668	2,449	4,117

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

HR OVERVIEW		
Sr. No.	Categories	Working Strength
1.	Officers	303
2.	Officials	6,640
Total		6,943

TECHNICAL OVERVIEW (ENDING JUNE-2024)	
Parameters	ENDING JUNE-2024 (Progress Achieved)
New Grid Stations	01
New Connections	19,254
AMR Meters Installed	-
Theft Cases	242
No. of HT Proposals	62
No. of LT Proposals	1,131
No. of Village Electrified	100

CAPEX BUDGET		
DESCRIPTION	Budget 2022-23 (Rs. Million)	Budget 2023-24 (Rs. Million)
Distribution of Power (DOP)	1,440	1,435
Energy Loss Reduction (ELR)	2,224	2,236

Year Book 2023-2024

8th Secondary Transmission & Grids (STG)	5,695	10,931
Deposit Works	4,858	1,780
Other	11,042	20,021
Total	25,259	36,404

EXPENDITURE ON INFRASTRUCTURE DEVELOPMENT

PROJECT	FY 2022-23 (Rs. Million)	FY 2023-24 (Rs. Million)	Total (Rs. Million)
STG	1,692	909	2,601
ELR	326	809	1,135
DOP	376	664	1,040
Total	2,394	2,382	4,776

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

HR OVERVIEW

Sr. No.	Categories	Working Strength
1.	Officers	301
2.	Officials	5070
Total		5371

TECHNICAL OVERVIEW (ENDING JUNE-2024)

Parameters	ENDING JUNE-2024 (Progress Achieved)
New Grid Stations	03
New Connections	1348
AMR Meters Installed	1880
Theft Cases	39161
No. of HT Proposals	2
No. of LT Proposals	63
No. of Village Electrified	1451

CAPEX BUDGET

DESCRIPTION	Budget 2022-23 (Rs. Million)	Budget 2023-24 (Rs. Million)
Distribution of Power (DOP)	1,478	1,048
Energy Loss Reduction (ELR)	1,195	1,243

Year Book 2023-2024

7th Secondary Transmission & Grids (STG)	5,120	3,811
Deposit Works	19,108	11,654
Other	1,635	1,309
Total	28,536	19,065

EXPENDITURE ON INFRASTRUCTURE DEVELOPMENT			
PROJECT	FY 2022-23 (Rs. Million)	FY 2023-24 (Rs. Million)	Total (Rs. Million)
STG	3,210	3,883	7,093
ELR	1,023	500	1,523
DOP	1,213	387	1,600
Total	5,446	4,770	10,216

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

HR OVERVIEW		
Sr. No.	Categories	Working Strength
1.	Officers	78
2.	Officials	929
Total		1007

TECHNICAL OVERVIEW (ENDING JUNE-2024)	
Parameters	ENDING JUNE-2024 (Progress Achieved)
New Grid Stations	03
New Connections	1531
AMR Meters Installed	685
Theft Cases	744
No. of HT Proposals	05
No. of LT Proposals	120
No. of Village Electrified	120

CAPEX BUDGET		
DESCRIPTION	Budget 2022-23 (Rs. Million)	Budget 2023-24 (Rs. Million)
Distribution of Power (DOP)	3,044	2,752
Energy Loss Reduction (ELR)	-	-
8 th Secondary Transmission & Grids (STG)	4,381	7,537
Deposit Works	-	-
Other	651	385
Total	8,076	10,674

EXPENDITURE ON INFRASTRUCTURE DEVELOPMENT			
PROJECT	FY 2022-23 (Rs. Million)	FY 2023-24 (Rs. Million)	Total (Rs. Million)
STG	1,454	1,651	3,106
ELR	-	-	-
DOP	1,968	1,672	3,640
Total	3,422	3,323	6,745

12. National Transmission and Despatch Company (NTDC)

After unbundling of WAPDA, 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 smooth functioning of entire power sector is dependent upon following core functions of NTDC:

- **Transmission and Network Operations**
 - ✓ Operation and maintenance of existing 500 & 220 kV network
 - ✓ Planning, design and construction of new 500 and 220 kV System
 - ✓ Strengthening and upgrading of existing transmission network.
- **System Operator**
 - ✓ Arranging non-discriminatory, non-preferential economic despatch
 - ✓ Ensuring safe, secure and reliable supply
- **Wire Business**
 - ✓ Transmission Planning
 - ✓ Design & Engineering
 - ✓ Project Development and Execution
 - ✓ Operation and Maintenance of Transmission Assets
- **System Operation and Despatch**
 - ✓ Generation Despatch
 - ✓ 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 and maintenance (O&M) of the transmission network comprising 19 Nos. 500 kV and 50 Nos. 220 kV grid stations besides 21,490 km 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:

Region	500 kV			220 kV		
	Grid Stations (Nos)	Transmission Lines (km)	Capacity (MVA)	Grid Stations (Nos)	Transmission Lines (km)	Capacity (MVA)
North	12	5,643	20,400	38	8,608.5	31,010
South	7	3,671	5,550	12	3,569	8,400
Total	19	9,314	25,950	50	12,176.5	39,410

- ✓ The above figures of 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 2023-24 is as below:

Sr. No.	Project Description	Completion Date	Voltage Level	MVA / km
1.	Augmentation of transformer at 220 kV Sammundri Rd. Grid Station	15.11.2023	220 kV	180 MVA
2.	500kV Balloki – Lahore North – Nokhar Line	17.01.2024	500kV	113 km
3.	Augmentation of transformer at 220 kV Ghakkar Grid Station	19.02.2024	220 kV	180 MVA

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4.	Augmentation of transformer at 220 kV Dharki Grid Station	08.03.2024	220 kV	90 MVA
5.	Addition of transformer at 220 kV Daud Khel Grid Station	11.03.2024	220 kV	160 MVA
6.	220 kV D/C T/Line for IN/OUT of KSK-Ghazi Road S/C T/Line	31.03.2024	220 kV	15 km
7.	220 kV D/C T/Line for IN/OUT of KSK-Ravi S/C T/Line	31.03.2024	220kV	17 km
8.	220 kV D/C T/Line for IN/OUT of Lahore-Ravi S/C T/Line	31.03.2024	220kV	8.5 km
9.	Addition of transformer at 220 kV Rohri Grid Station	13.05.2024	220 kV	250 MVA
10.	Augmentation of transformer at 220 kV Bahawalpur Grid Station	28.06.2024	220 kV	90 MVA
11.	Re-Conductoring Of Old 500kV Single Circuit Hub-NKI T/Line And Modification Of Existing Interconnection Scheme Of K2 T/Line With Hub-NKI T/Line	29-10-2023	500kV	24km
12.	Construction of 220kV DIA along with addition of 3 rd 220/132kV, 160MVA Auto Transformer Bay Khuzdar	09.06.2024	220kV	160MVA
13.	500kV 3x37MVAR Shunt Reactor Bank at 500kV Grid Station Guddu	25.12.2023	500kV	3x37MVAR

- ✓ A summary of addition in transmission system since FY 2023-24 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)
	New (Nos.)	Addition/ Augmentation (Nos.)	km	MVA
500 kV	-	-	113	-
220 kV	-	06	40.5	950

● FUTURE EXPANSION OF TRANSMISSION SYSTEM:

- ✓ In addition to the above, NTDC has also drafted a Transmission Expansion Plan 2024 - 2034 which envisages completion of several projects. As per TSEP 2024-34, NTDC system will be expanded up to the future year 2034 as shown in the table below:

Future System (2034)			
Category	Grid Stations (No.)	Transmission Lines (km)	Capacity (MVA)
500 kV	28	14,683	48,550
220 kV	67	15,088	56,470
±660 kV	02 (Converter Stations)	1,772	4,000
±500 kV	1 (Converter Station)	226	1,000
Total	98	31,769	110,020

● 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:
 - CASA-1000 for evacuation of 1000 MW of power (during the summer season) through ±500 kV HVDC Transmission Line emanating from Sangtuda, Tajikistan and passing through Kyrgyzstan, Afghanistan and terminating at Nowshera Pakistan;

- b) 765 kV Transmission Line Project (250 km length) for dispersal of power from upcoming Dasu Hydropower Project and culminating at future 765 kV Islamabad West grid station (the first of its kind in Pakistan).
- c) Construction of grid stations and allied transmission lines at Swabi (for Rashakai SEZ), Haripur (for Hattar SEZ), Allama Iqbal Industrial City (for FIEDMC SEZ), Dhabeji (for Dhabeji SEZ) etc. for provision of electricity to Special Economic Zones (SEZs) under CPEC.
- d) Installation of Pilot 20MW/ 20 MWh Battery Energy Storage System (BESS) at 220 kV Jhampir-I Grid Station, a first in Pakistan's history.
- e) Online Transformer Monitoring system is a new technology that monitors real-time condition of transformers in order to pre-empt any fault in the transformers. NTDC has initiated procurement process of this system whereby it will be installed initially at two (02) grid stations as a pilot project. Upon successful implementation, the system is expected to be incorporated as a standard part of grid stations in future.
- f) Government of Pakistan has envisaged to increase the renewable energy in country's energy mix by installing three (03) Solar Power Plants with a total capacity of 2400 MW in order to decrease the dependence on imported fuel and to decrease burden on public exchequer. This will also help decrease the carbon footprint of energy production. NTDC has been tasked to acquire a total of 9,772 Acres of land for such power plants. NTDC has acquired 4,972 acres whereas acquisition of remaining 4,800 acres is under way.

- **RELIABLE DESPATCH & REMOVAL OF SYSTEM CONSTRAINTS:**

- ✓ 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, progress has been achieved with regard to phase-wise removal of System Constraints. Presently, NTDC has overcome major System Constraints (06 number projects) for Summer 2024, while efforts are being made to expand the system in order to overcome the Constraints intended for removal in future (beyond 2024).

● **CAPITALIZATION:**

✓ Details of Capitalization for the last 03 years are given as hereunder for reference:

Financial Year	Rupees in Billions
2021-22	37.83 Billion
2022-23	52.20 Billion
2023-24	63.64 Billion

● **PROFIT / (LOSS) AFTER TAX:**

✓ The company has made a landmark achievement of generating high profits in the history of NTDC during the previous financial years:

Financial Year	Profit/ (Loss) After Tax
2021-22	16.56 Billion
2022-23	12.40 Billion
2023-24	(4.85) Billion

● **CREDIT RATING:**

✓ In line with the requirement of World Bank (under NTMP-I financing, Capacity Building Component), NTDC hired the services of Pakistan Credit Rating Agency (PACRA) for Credit Rating of NTDC, development of its Financial Model and allied training. PACRA assigned NTDC initial entity rating of AA+ for long term and A1+ for short term, while forecasting the outlook of NTDC as stable on the basis of this rating.

✓ The Credit Rating will provide an independent view of the ability of NTDC to meet its financial obligations in full and on time (creditworthiness). This rating will also help NTDC to communicate its credit quality to potential lender or investors and anticipate the pricing to be offered on new debts.

● **STATEMENT OF LEGAL CASES:**

✓ Being one of the largest public sector companies in Pakistan that deals with IPPs & construction contractors, consultants etc. some disputes also arise between NTDC & other parties which take the shape of court cases, arbitration etc. However, for the past 03 years NTDC has enjoyed a success rate ranging from 80 to 85 % in litigation/ court cases etc.

● **PREPARATION & SUBMISSION OF TRANSMISSION SYSTEM EXPANSION PLAN (TSEP) and IGCEP as per Grid Code 2023:**

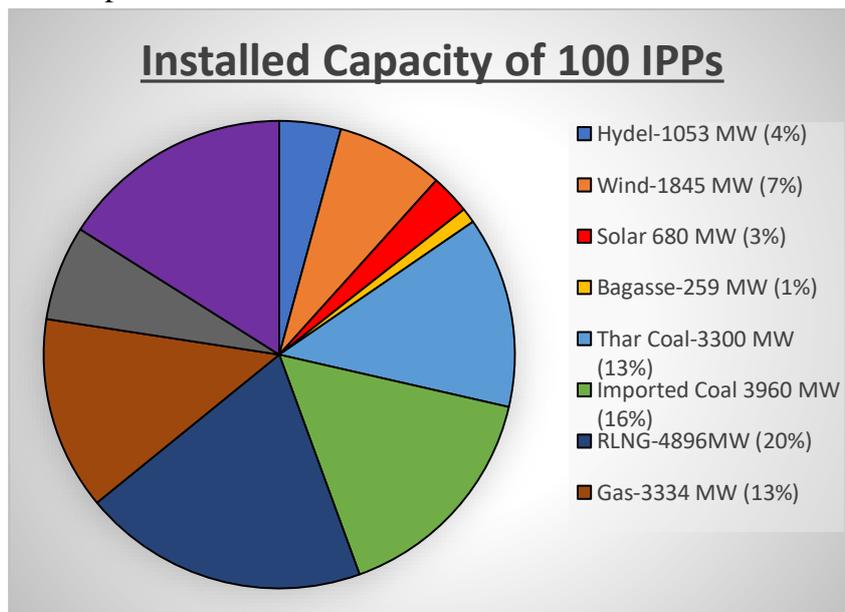
✓ As per Grid Code 2023, Indicative Generation Capacity Expansion Plan (IGCEP) 2024-34 is prepared by System Operator. (PSP) NTDC is prepared the Transmission System Expansion Plan (TSEP) accordingly and submit to System Operator. After review, (SO) NPCC is submitted both IGCEP and TSEP to NEPRA on 30.04.2024 for approval.

13. POWER PLANNING AND INFRASTRUCTURE BOARD (PPIB)

Private Power and Infrastructure Board (PPIB) is a “One Window Facilitator” on behalf of the Government of Pakistan (GoP) and its entities for the facilitation and implementation of power projects primarily through private sector investment. PPIB was mandated to process and implement conventional fuels-based IPPs (Thermal/Coal and also hydro) whereas AEDB scope was limited to Alternative and Renewable Energy (ARE) based IPPs (wind/solar/bagasse). The merger of AEDB into PPIB has consolidated the strengths, expertise, resources, and mandates of AEDB & PPIB, thereby empowering PPIB to act as a true one-window facility for smooth and seamless development and processing of power projects of all technologies including ARE projects by PPIB as one entity on behalf of the GoP. PPIB is also leading the Energy Planning Expert Panel (EPEP) forum of CPEC and assisting in holding Joint Energy Working Group (JEWG) and Joint Cooperation Committee (JCC) meetings of CPEC.



PPIB is playing a key role in enhancing the power generation capacity of the country through private and public sector participation and has so far achieved considerable progress through the successful commissioning of forty-six (46) multi-fuel-based Independent Power Producers (IPPs) of 22,174 MW including hydropower, indigenous Thar coal, Gas/RLNG and Oil. In addition, a +660kV HVDC Matiari-Lahore transmission line project has also been commissioned through private sector investment through PPIB. Moreover, fifty-four (54) Alternative and Renewable Energy (ARE) IPPs of 2,784 MW have also been commissioned. The cumulative capacity of aforementioned 100 IPPs reaches to 24,958 MW which represents 61% of the national grid's capacity and has attracted over USD 33 billion as foreign direct investment. A breakup is as follows:



Fuel/Technology	No. of IPPs	Installed Capacity (MW)
• Hydel	04	1053
• Wind	36	1845
• Solar	10	680
• Bagasse	08	259
• Thar Coal	05	3300
• Imported Coal	03	3960
• RLNG	04	4896
• Gas	14	3334
• KAPCO Multiple Fuels (Gas/ HSFO/HSD/RLNG)	01	1638
• RFO	15	3993
Total	100	24,958 MW

Transmission Line Project

• ± 660kV HVDC Transmission Line Project	01	4000 MW
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• **Policy Frameworks**

PPIB is currently operating under various policies / frameworks, including;

- ✓ National Electricity Policy (NEP) 2021,
- ✓ National Electricity Plan 2023-27,
- ✓ Power Generation Policy 2015,
- ✓ Policy Framework for Private Sector Transmission Line Projects 2015,
- ✓ Alternative and Renewable Energy (ARE) Policy 2019,
- ✓ Framework Guidelines for Fast-Track Solar PV Initiatives 2022,
- ✓ NEPRA (Alternative & Renewable Energy) Distributed Generation,
- ✓ Net Metering Regulations 2015, and
- ✓ AEDB (Certification) Regulations.

• **Performance Highlights of PPIB during 2023-24**

GoP is focusing on the effective use of renewable and indigenous energy sources through its national policies, which are aligned with the United Nations (UN)'s Sustainable Development Goals (SDGs). In this context, PPIB has made significant strides in advancing

and implementing a new wave of IPPs, primarily based on ARE sources, including hydropower. Key achievements of PPIB for the year 2023-24 are summarized below:

(i) **Commissioning of 3 Solar Projects (each 50 MW) by Scatec, Norway**

Due to PPIB's swift processing and facilitation, following three solar based power generation projects (each 50 MW) in Sukkur, Province of Sindh have successfully achieved commissioning.

- ✓ 50 MW HNDS Energy (Pvt) Ltd achieved COD on 10th January 2024
- ✓ 50 MW Meridian Energy (Pvt) Ltd. achieved COD on 19th January 2024
- ✓ 50 MW *Helios Power* achieved COD on 1st February 2024

(ii) **Thar Coal based Shanghai Power Project**

PPIB announced Financial Close of 1320 MW, Thar Coal based Shanghai project on 13th December 2023, which was commissioned on 5th February 2023.

(iii) **Suki Kinari Hydropower Project**

884 MW Suki Kinari Project is so far the largest hydro IPP in Pakistan which has achieved financial close and is currently under construction. The reservoir filling of the Suki Kinari Hydropower Project started successfully in February 2024, marking the completion of another significant milestone and laying a solid foundation for the scheduled power generation target of the project. Furthermore, important structures of Suki Kinari hydro power project like installation of turbines, surge shaft, gas insulated substation etc., were also completed successfully during 2023-24. PPIB is diligently monitoring construction work which is in final phase with over 98% completion of work by June 2024. The Project is set to be operational in November 2024.

(iv) **Bagasse based Shah Taj Sugar Mills Project**

32 MW bagasse-based project by Shah Taj Sugar Mills located in Mandi Bahauddin has accomplished significant proportion of construction work and progressing satisfactorily to achieve commissioning by December 2024.

(v) **RLNG based PTPL Power Project**

The 1263 MW RLNG based power project by Punjab Thermal Power Project (PTPL) located near Trimmue Barrage, Jhang successfully completed commissioning tests on HSD in December 2023. The commissioning tests on Gas were completed on 23rd June 2023.

(vi) **Net-Metering**

As of May, 2024, the total capacity of net-metering based installations has reached up to 2187 MW which translates into 4.8% of the total utility scale grid connected power generation capacity of Pakistan.

• **Future Plans and Targets**

As Pakistan leaps towards a future marked by a sustainable, reliable and secure power sector, PPIB is working on augmenting the power sector infrastructure based on affordable and environment friendly power, for which several key energy sources have assumed pivotal roles. Each of these resources, i.e. hydropower, wind, solar, bagasse, and Thar coal contributes uniquely to the energy landscape, addressing different aspects of sustainability and security.



Being a policy implementing agency of GoP, PPIB is dedicated to advancing the development of clean and indigenous power generation sources. Due to concerted efforts, the share of AREs (wind/solar/hydel/bagasse) has already surpassed 31% of the power generation mix, however; ARE promises a higher proportion of the national energy supply mix and can help ensure universal and affordable access to electricity in all parts of the country. *For the same reason, pursuant to draft IGCEP 2024-34, the share of renewables is expected to increase from present 31% to 53% of the installed capacity by 2034 while the share of energy generation from renewables is expected to reach up to 56% by 2034.*

PPIB is working on multiple fronts such as diversifying the energy mix, prioritizing indigenous and renewable resources, replacing imported fuel based IPPs to indigenous and renewable fuels/technologies etc. Alongside, PPIB is steadily progressing towards successful energy transition and promotion of indigenization. This is evident from the fact that PPIB’s current portfolio consist of twenty-five (25) new multiple fuel (solar, wind, coal, hydro, R-LNG/Gas, bagasse) based IPPs with cumulative capacity of 7,490 MW. These 25 projects include 22 renewable energy projects (including hydropower) which narrates that around 88% of total under process projects are clean and green energy projects. This scenario testifies PPIB’s steadfast approach for promotion of indigenization and implementation of RE based power projects in the country. Further, GoP has also decided to process future projects based on demand-supply projections as per approved IGCEP. Summarized form of the portfolio is as follows:

Portfolio of Upcoming 25 IPPs of 7490 MW									
Year	Hydel	Solar	Wind	Bagasse	Thar Coal	Imp. Coal	Gas	Total IPPs	Total Power Generation (MW)
2024	1* (884 MW)	-	-	1* (32 MW)	-	-	-	2	916.00
2025	-	2 (110.27 MW)	-	1 (30 MW)	-	1 (300 MW)	-	4	440.27
2026	1	2	-	-	-	-	-	3	28.60

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	(7.08 MW)	(21.52 MW)							
2027	1 (8.00 MW)	-	-	-	-	-	-	1	08.00
2028	-	1 (100)	2 (100)	-	1 (1320 MW)	-	-	4	1520.00
2029	1 (82.25)	-	-	-	-	-	-	1	82.25
2031	2 (432 MW)	-	-	-	-	-	-	2	432.00
2032	2 (1340.7 MW)	-	-	-	-	-	-	2	1340.70
2034	1 (1124)	-	-	-	-	-	-	1	1124.00
Other Projects	4 (1578 MW)	-	-	-	-	-	1 (20 MW)	5	1598.00
Total	13 (5456 MW)	5 (231.79 MW)	2 (100 MW)	2 (62 MW)	1 (1320 MW)	1 (300 MW)	1 (20 MW)	25	7490.00

* Projects under Construction

NOTE: Under construction projects would be completed by end of 2024. For remaining projects, exact date for commissioning will be finalized as per the Indicative Generation Capacity Expansion Plan (IGCEP) which is under approval by NEPRA and subject to the resolution of various issues.

i. Independent Auction Administrator (IAA) under CTBCM Regime

Pursuant to PPIB's registration as IAA by NEPRA in January 2024 under CTBCM, PPIB has formally assumed the role of Independent Auction Administrator (IAA). PPIB is actively participating in the CTBCM implementation and planning to conduct future power procurements in accordance with the IGCEP projections. Some of the key functions to be performed by PPIB as IAA, inter-alia, include;

- ✓ Preparation of Annual Power Procurement & Auction Plan (PPAP) considering the Power Acquisition Program (PAP) of SOLRs as well as IGCEP and TSEP;
- ✓ Planning and conduct of Auctions/Biddings;
- ✓ Establish an electronic auction platform linked to website;
- ✓ Coordination with DISCOs / SOLRs for their future power requirements;
- ✓ Assist other market players like KE for power procurement;
- ✓ Facilitate DISCOs with regards to execution of Security Documents with Generators; and
- ✓ Facilitation to financially weak DISCOs with regards to Guarantees for payment obligations towards generators.

Currently, the CTBCM Security Package Documents (SPDs) for solar technology are under preparation and review in collaboration with legal consultant engaged by the World Bank.

These documents also encompass the draft Connection Agreement between the Distribution Company and the Power Generation Company. The complete set of SPDs, including the Connection Agreement between the Distribution Company and the Power Generation Company will be soon shared with stakeholders.

ii. Fast Track Solar Initiatives

In order to reduce the impact of prevailing high prices of oil and LNG in the international markets resulting in high electricity tariffs and drain of precious foreign exchange, the Government has approved the Framework Guidelines for Fast-Track Solar PV Initiatives 2022 for fast-track deployment of solar PV. These initiatives include:

- ✓ Substitution of Expensive Imported Fossil Fuels with Solar PV Energy;
- ✓ Solar PV Generation on 11 kV Feeders; and
- ✓ Solarization of Public Buildings

Under this initiative, Solar PV based power generation capacity shall be procured for substitution of expensive imported fossil fuels used for power generation. Exact quantum will be determined on approval of the IGCEP by NEPRA.

In this regard, as a first step, a 600 MWp solar project is planned to be developed at Kot Addu / Muzaffargarh on G2G mode and the same has been offered to Government of KSA.

iii. Certification of Service Providers for Net- Metering

In order to maximize the utilization of ARE technologies, NEPRA announced NEPRA (Alternative & Renewable Energy) Distributed Generation and Net Metering Regulations, 2015 in September, 2015. These regulations provided the framework for implementing net-metering installations using solar and wind generation of up to 1 MW capacity. PPIB has also been carrying out certification of service providers / installers of solar systems under AEDB (Certification) Regulations for the safe, secure and quality-assured supply of solar and wind energy generation projects, products, systems, installation and servicing thereof. As of May 2024, the number of active AEDB certified installers has exceeded 510.

iv. Category-III Wind and Solar IPPs

In the light of CCoE's decision taken in Feb, 2019, Category-III wind (500 MW) and solar (2500 MW) IPPs will be considered for further processing through competitive bidding after finalization of Indicative Generation Capacity Expansion Plan (IGCEP) and Transmission System Expansion Plan (TSEP).

v. Pumped Storage Hydropower Projects

As the share of Must-Run Power Projects (hydel, wind, solar, nuclear) is gradually increasing in national grid, the installation of Pumped Storage Hydropower Projects (PSHP) will be required in near future to cater for the intermittency of above-mentioned fuel-based power projects as well as serving peak demand in the country. In this regard, an identification study for potential sites is being initiated under the CPEC.

vi. Conversion of Imported Coal based IPPs to Thar Coal

Pakistan is blessed with vast 175 billion-ton Thar Coal Reserve which is sufficient to provide cost-effective and indigenous fuel option for base load power generation for decades to come. So far, five Thar Coal based IPPs of 3,300 MW have been commissioned through PPIB which are providing inexpensive electricity to the national grid. These projects include;



Sr/No	Name of Projects
1	1320 MW Thar Coal Block-1 Company (Shanghai) at Thar Block-1
2	660 MW Engro Power Project at Thar Block-II
3	660 MW Lucky Electric Project at Port Qasim
4	330 MW Thar Energy Limited Project at Thar Block-II
5	330 MW ThalNova Project at Thar Block-II

Due to increased prices of imported coal in international market and USD exchange rate, GoP took the initiative to substitute imported coal-based IPPs with Thar coal. In this regard, on the direction of Ministry of Energy (Power Division), renowned consultant (Fichtner) conducted a feasibility study for conversion of imported coal-based IPPs to Thar coal. The feasibility study suggested that as a first step, these IPPs may start on-site testing from 10% Thar coal blending with imported coal. Hence, it is need of the hour to facilitate these IPPs towards conversion to Thar coal.

Subsequently, efforts are underway to start blending of Thar coal by Three imported coal-based IPPs with a cumulative capacity of 3,960 MW which were implemented under CPEC regime, namely;

- ✓ 1,320 MW Sahiwal Coal Power project located at Sahiwal;
- ✓ 1,320 MW Port Qasim Coal Power Project located at Port Qasim; and
- ✓ 1,320 MW Hub Coal Project located at Hub

The annual requirement of these coal power plants at full load capacity is about 12 million tons and estimated cost of its import is around 1.2 billion USD per annum, which may vary subject to coal prices in the international market and USD exchange rate. Thar coal will provide energy security, reduce dependence on imported fuel, save billions of dollars of precious foreign exchange and bring down the average basket cost of generation which are key factors towards sustainability, self-reliance, generate thousands of jobs for the local population and initiate various community welfare schemes under Corporate Social Responsibility (CSR) obligation of various mining and power generation companies.

vii. New Transmission Projects through Private Sector

With ever-increasing demand of power, it is of paramount importance that the infrastructure is made available to transport electric power from generation facilities to towards the load centers / national grid in an efficient and reliable manner. In this regard, PPIB is looking towards implementing new transmission line projects through private sector under the Policy Framework for Private Sector Transmission Line Projects, 2015 (the TL Policy 2015), whose scope has been broadened by inclusion of “*Ancillary Services Projects*” vide ECC decision dated 7th August 2023.

PPIB intends to initiate ICB(s) for award of new transmission projects to private sector, in collaboration with other stakeholders, after approval of Transmission System Expansion Plan (TSEP), which would provide firmed up NTDC’s system requirements for future transmission projects including those projects which would be suitable for implementation through private sector.

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 2023 to June 2024, NESPAK continued to provide consultancy services to its Clients at home and abroad on 276 multidisciplinary projects. Following are the major ongoing projects of NESPAK



Following are the major ongoing projects of NESPAK:

Sr / No	Name of Project
1	4500MW Diامر Basha Dam
2	800MW Mohmand Dam Hydropower Project
3	Projects under Annual Development Program
4	Reconstruction and Rehabilitation of Earthquake Affected Areas
5	Emergency Flood Assistance Project, Khyber Pakhtunkhwa
6	Punjab Intermediate Cities Improvement Investment Program (PICIIP)
7	Provincial Sector Development Project (North Punjab)
8	National Program for Improvement of Watercourses in Pakistan, Phase-II
9	(i) LDA City (ii) Signal-Free Corridor from Gulberg to Walton Road (iii) Bedian Road Underpass near Lahore Ring Road (iv) Saggian Bypass Begum Kot Road
10	1263MW Re-Gasified Liquefied Natural Gas (RLNG) Based Combined Cycle Power Plant near Trimmu Barrage in Jhang District
11	500kV Transmission Lines Interconnection Arrangement for Power Evacuation from Suki Kinari, Kohala and Mahl Hydropower Projects in Northern Areas
12	Balochistan Water Resources Development Sector Project
13	Expansion of Terminal Building & Allied Facilities at Allama Iqbal International Airport, Lahore
14	Lahore Ring Road (22.4km) Project Southern Loop
15	Strengthening of East-West Connectivity of Merged Areas (FATA) with Settled Districts and Improvement Links (AIP 2019-20-CR042)
16	Permanent Reconstruction Works in Federally Administered Tribal Areas (FATA)
17	Rehabilitation and Upgradation of Balloki Barrage and Lower Bari Doab Canal
18	Trimmu and Panjnad Barrages Improvement Project

● **NEW PROJECTS**

During the period under review, the Company secured business worth Rs. 23 billion (estimated) in Pakistan and overseas. Total numbers of projects secured during this period were 156 which included 140 domestic and 16 overseas jobs. Outside Pakistan, business was won in Bahrain, Oman, Qatar, Saudi Arabia, UAE, Uzbekistan and Yemen.

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

Sr / No	Name of Project
1	Land Development in Greater Cholistan (Phase-I) Under Green Pakistan Initiative
2	Third Party Monitoring and Evaluation of Implementation of M&R Works in Irrigation Department FY 2023-26
3	Punjab Resilient and Inclusive Agriculture Transformation
4	Arterial Main, Secondary and Distribution Network in the Areas in the Eastern Part of City (Water Supply System), Faisalabad
5	Implementation of Web Based GIS along with Mobile Application and Mapping of HT/LT Distribution Network
6	Implementation of Web Based Geographical Information System along with Mobile Application and Mapping of HT/LT Distribution & Transmission Network of LESCO
7	Exploring Water Potential of Soan River, Punjab
8	Improvement of Kalri Bhagar Feeder and Keenjhar Lake - Plain Cement Concrete Lining of Kalri Baghar Feeder Upper - Phase-I
9	Rehabilitation and Reconstruction of N-5 from Moro to Ranipur
10	Improvement & Rehabilitation Works of Akram Wah Canal
11	Development of Master Plan and Engineering Services of Nawaz Sharif IT City
12	Less Developed Areas of Balochistan; 1) Turbat Mand Road from Motorway (M-8) Till Iranian Border (Radeeq); 2) Ninheng Bridge at Rodbun, District Kech
13	Green Pakistan Initiative at Greater & Lesser Cholistan
14	Water Resources Development in Cholistan
15	Study/Evaluation of Safety of the Existing Dams in different Regions of Saudi Arabia
16	Low and Medium Voltage Electrical Networks in Aden Governorate in the Yemen
17	Asphalt Roads in Wilayat of Muqshin, Oman

18	Remaining Sewerage Network & Design and Build of Sewage Treatment Plant, Buildings and Pipeline for Wilayat Al-Musanaah, Oman
19	Completion of Al-Batinah Expressway (Package-III), Oman

● **PROJECTS COMPLETED**

During July 2023 to June 2024, NESPAK successfully completed 68 projects at home and abroad. Some important projects are:

Sr / No	Name of Project
1	220kV Double Circuit Transmission Line from D.I. Khan to Zhob (220km)
2	Upgradation of Shipyard for Project 313
3	Five Years of Saaf Pani Project, Punjab
4	Punjab Assembly Building, Lahore
5	Surgical Complex at Jinnah Postgraduate Medical Centre (JPMC), Karachi
6	Jalozai Campus of University of Engineering and Technology, Peshawar
7	Promotion of High Value Agriculture Through Solarization of Drip & Sprinkler Irrigation System, Punjab
8	Bypass Road (18km) from Ayub Bridge Havelian to Dhamtour N-35, Abbottabad
9	Hakla-Dera Ismail Khan Motorway (285km) and Four Lanes Road from Yarak to Zhob including Zhob Bypass (255km)
10	Study of Pollution Treatment in Various Regions, Saudi Arabia
11	Dams in Southern Region, Saudi Arabia
12	110kV Thuwal Substation/Transmission Line Project Jeddah, Saudi Arabia
13	Qanunah and Yabah Dams, Saudi Arabia
14	Raising of Wala Dam, Jordan
15	Kano River and Hadejia Valley Irrigation Schemes, Dams Safety and Rivers Training in Hadejia Jama'are River Basin, Nigeria

15. Central Power Purchasing Agency (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.

• Key Achievements and Activities During F.Y 2023-24:

The following are the key achievements that reflect CPPA-G's ongoing commitment to improving the power sector in Pakistan:

- I. CPPA-G has adhered to regulatory requirements, aligning with the Companies Act, 2017, SOE Act 2023 and Public Sector Companies (Corporate Governance) Rules, 2013 and other relevant legislation, thereby establishing a strong governance framework.
- II. CPPA-G team demonstrated its dedication to precision, transparency, and adherence to regulatory frameworks such as NEPRA Tariffs, NEPRA regulations, and PPA/EPA provisions. Through rigorous pre-audit and due diligence efforts, the team meticulously identified and disallowed ineligible claims of billions of Rupees from Independent Power Producers (IPPs), underscoring the team's commitment to integrity and professional standards.
- III. Enabling spot buying of coal in Pak Rupees by Coal IPPS instead of imported coal in FX has resulted in availability of coal for generation; otherwise, the issue of CPP deduction due to non-availability of coal would have extended to all the coal IPPs.
- IV. Negotiation with power plants for tariff discounts and capping of gas marker price has reduced the circular debt by billions of Rupees.
- V. Settlement of CPP deduction issue with a power plant due to non-availability of FX for procurement of coal, has resulted in savings country's reputation and immediately saved billions of Rupees.
- VI. CPPA-G got approval of Cabinet Committee on Energy (CCoE) on Final Test Run Report (FTRR) Pursuant to the NEPRA's determination, and submitted the FTRR & revised Market Commercial Code to NEPRA.
- VII. CPPA-G played a crucial role in developing and implementing the CTBCM, a framework designed to introduce competition and efficiency in the electricity market in Pakistan.

Further, CPPA-G has secured approval from NEPRA on Market Commercial Code and Test Run Plan and assisted in developing CTBCM implementation plans of DISCOs, NTDC, NPCC, PPIB, AEDB etc. for collaborative and synergized efforts toward implementation of competitive market.

- VIII. CPPA-G has maintained its legacy by introducing third signature Electricity Market Professional (EMP) Program.
- IX. CPPA-G organized series of consultative workshops on the Test Run to deliberate on specific action items on CTBCM.
- X. CPPA-G organized multiple orientation sessions for LESCO, PESCO, IESCO and GEPCO Board of Directors for creating awareness for stakeholders on the CTBCM.
- XI. Developed Commercial Code Operating Procedures (CCOPs) for Market and Contract Registration, Metering, Firm Capacity Certification, Capacity Obligation and Security Covers.
- XII. Provided assistance to Power Division for development of National Electricity Plan and it was approved by Cabinet on 9th August, 2023. The NE-Plan, comprising 20 priority areas & 6 objectives, deals with all the dimensions of the power sector and provides a concrete action plan with timelines & targets (for the respective entities) to enable the attainment of sustainability in the sector and contribute towards economic stability through targeted measures on contours, inter alia, integrated planning, investments, subsidies & fiscal incentives, regional integration, tariff design, climate change, governance and capacity building
- XIII. The Power Purchase Agency Agreement was finalized with K-Electric for the supply of 1400 megawatts (MW), resolving longstanding issues between the Government of Pakistan (GoP) & KE and creating win-win solutions for consumers, KE, and the government.
- XIV. CPPA G, in coordination with the Ministry of Energy (MoE), managed the release of Rs. 529 billion, aimed at reducing/maintaining the flow of circular debt, thereby ensuring financial viability & stable electricity supply across the nation.
- XV. Successful achievement of the Commercial Operation Date (COD) for the state-of-the-art RLNG power plant of Punjab Thermal (Trimmu), marking a significant milestone in contributing to energy security and meeting the growing electricity demand.
- XVI. Various information systems have been developed i.e Market Management System (MMS), System Operator Data Exchange Portal (SDXP), Marginal Price Application (MPA), Secured Metering System, Leave Management System, Integrated Management System and Market Operator Website etc.
- XVII. We have been at the forefront of harnessing the latest technologies, revolutionizing our operations, and propelling our organization into the future. Through strategic implementation of emerging technologies, such as artificial intelligence, blockchain, and

cloud computing, we have seamlessly transformed critical processes, enhancing efficiency and productivity.

XVIII. Our dedicated team has implemented state-of-the-art security protocols, leveraging advanced threat detection systems and proactive monitoring measures. As a result, we have successfully safeguarded sensitive data, ensuring the utmost protection for our organization and stakeholders, our efforts have seamlessly integrated digital solutions across various departments, optimizing processes, and fostering a culture of efficiency and innovation. By implementing robust data management systems and leveraging advanced analytics tools, we have unlocked valuable insights, enabling evidence-based decision-making and driving organizational growth.

XIX. The implementation of the ERP Financials System for Market Operations (MO) within CPPA-G has significantly enhanced financial management across various modules, including General Ledger, Payables, Receivables, Cash Management, Accounting, and Org Structures. The successful integration with EBS and MMS further streamlines our organization's operations. A major upgrade of the Oracle EBS database and application was successfully executed, resulting in enhanced security, functionality, and system performance.

XX. CPPA-G has played a pivotal role in fostering the professional growth and development of employees at CPPA-G through an array of capacity-building training programs. With a focus on enhancing skill sets and fostering continuous learning, the HR department has successfully organized both in-house and external training sessions throughout the year. These training initiatives have been carefully designed to empower employees and equip them with the knowledge and competencies needed to excel in their respective roles.

XXI. CPPA-G had the privilege of hosting a group of talented and motivated female participants, for the second time, as part of the Future of Women in Energy Scholars Program, a collaboration between the U.S. Pakistan Women's Council and USAID's Power Sector Improvement Activity (PSIA).

XXII. CPPA-G successfully made and got approved the Business Plan and Statement of Corporate Intent for F.Y 2024-25 to 2026-27 from Board and has submitted to Power Division and Central Monitoring Unit of Finance Division as per requirement of SOE Act 2023.

• **Key PERFORMANCE indicators (kpi):**

S.#	Key Performance Indicators	Progress against KPIs
1	Processing of POP Invoices as per PPA/EPA Timelines	CPPA-G processed the 7,131 invoices for payments, received from IPPs on account of Capacity Purchase Price (CPP), Energy Purchase Price (EPP), GST, pass through etc. and achieved the 100% of target by processing all the invoices.
2	Processing of LD Invoices as per PPA/EPA Timelines	CPPA-G processed 62 Liquidate Damanges (LD) Invoices during year in due course of time
3	Issuing Back-feed Energy Billing as per PPA/EPA	Back feed energy billing 100% processed as per PPAs/EPAs.
4	Disbursement of overnight available funds on the next working day as per approved allocation policy of the Company.	CPPA-G efficiently disbursed all available funds on daily basis as per approved allocation policy of the Company.
5	Witnessing of Annual Capacity Test of Power Plants	CPPA-G witnessed 14 Capacity tests during Financial Year.
6	Submission of monthly Fuel Cost Adjustments for previous month to NEPRA on or before 15th day of current month.	CPPA-G timely filed the Fuel Price Adjustment (FPA) applications to NEPRA
7	Issuance of 12 monthly Preliminary and Final Settlement Statements and one Yearly Settlement Statement of each market participant.	Twelve monthly Preliminary Settlement Statements issued on timely basis to Market Participants.
8	Development of Six Commercial Code Operating Procedures (CCOPs).	The drafts of all CCOPs have been completed. The same are currently under review for alignments with the revised Market Commercial Code.
9	Complete development of Market Management System Phase-II.	Development of the system has been completed. Simulation of the system using real-time data is under progress.
10	Publication of Market Outlook Report each year.	The draft of the report has been prepared. The same will be published after Commercial Market Operation Date (CMOD).

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S.#	Key Performance Indicators	Progress against KPIs
11	Merit Order Automation	The application has been developed. Roll out is in progress. The dependency of final go-live resides with IPPs participation and support and it is a cross functional target.
12	SDXP Integration in legacy settlement process.	This is a cross functional target. The development work on the integration is under progress with 75% completion.
13	Organizing 5 workshops per year for training & capacity building of the allied power sector entities pertaining to electricity market.	Following training workshops have been delivered during the period: EMTP Sessions (Module 1 – 4) Generation Planning 2023 Module-I. Transmission Planning 2023 Module-I. Medium Term Demand Forecasting 2023 Module-I. Training workshops for all ten DISCOs on FACOS Model. Training workshop on CTBCM for Audit officers. Two Training Workshops on Business Communication for CPPA-G officers.
14	Processing of data on ERP module for billing and settlement of Market Transactions.	ERP is functional and ready for generating invoices. It is planned to generate mock invoices for billing and settlement module of the ERP to test the system using real-time data.
15	Timely filing of monthly sales tax returns, quarterly withholding income tax statements and annual income tax returns along with timely payment of taxes (if any).	CPPA-G efficiently filed all the monthly sales tax return and quarterly withholding income tax statements to FBR.
16	Timely completion of the audit of annual financial statements of the Company by the external auditors of the Company and present annual financial statements (initialed) to the Board of Directors of the Company for approval through Audit Committee within stipulated time.	CPPA-G timely completed the Statutory Audit for F.Y 2022-23, same was duly submitted to SECP and the audit of Annual Accounts for F.Y 2023-24 will be prepared and submitted to Board through Audit Committee in timely manner as prescribed in SOE Act 2023.

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S.#	Key Performance Indicators	Progress against KPIs
17	Submission of power purchase price outlook to NEPRA within one month after the submission of IGCEP every year.	Report submitted to NEPRA in due course of time.
18	Employee's Development and Career Advancement	In the FY2023-24, the HR and Admin department of CPPA-G launched comprehensive technical and soft skills training programs for employees, with the aim of enhancing their current skill set and contributing to more effective work and results. This initiative resulted in a significant 14.4% increase in Training & Development hours, moving from 344 hours (Jan-Jun 2023) to 402 hours (July-Dec 2023). The number of training days also rose from 43 to 54 during the respective periods, underscoring our commitment to fostering continuous learning.
19	Holding Board Meetings	CPPA-G conducted the 10 meetings of Board of Directors and 25 meetings of Board committees.
20	Preparation of annual and Semi-annual report of CPPA-G, Business Plan	Semi-annual report has duly prepared and submitted to Power Division and CMU. CPPA-G timely prepared and published the Annual Report for F.Y 2022-23 and same was submitted to Power Division and NEPRA. The Annual Report for F.Y 2023-24 in is process and will be completed in due course of time as stipulated in SOE Act 2023.
21	Carry out internal audit as per plan approved by the Audit Committee	As per approved Internal Audit Plan, the internal audit team performed audit of following processes and presented in the Audit Committee; Back Feed Billing to, and settlement thereon with the Power Producers. Process review of Governance, Risk Management and Internal Controls of the Legal department. Information Technology Audit broadly covering the IT governance structure, policies, and implementation and testing of General IT Controls (GITCs).

S.#	Key Performance Indicators	Progress against KPIs
		<p>Human Resource Management & Payroll Processing.</p> <p>Treasury Management Function.</p> <p>Agency's Operational Expenditure Verification.</p> <p>Process Review of technical and financial verification of Power Purchaser Invoices for 1994 Policy Power Projects.</p> <p>Process Review of technical and financial verification of Power Purchaser Invoices of renewable projects under 2006 Power Policy.</p> <p>Follow up with all departments for timely redressal/resolution of audit committee directions.</p>

16.National Power Parks Management Company (Pvt.) 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 62.185% for HBS & 61.7% for Balloki which were achieved.

<u>General Overview of Plants:</u>	<u>1230 MW - Haveli Bahadur Shah Plant</u>	<u>1223 MW - Balloki Plant</u>
Location	25 km from Jhang city, adjacent to TS (Trimmu-Sidhnai) Link Canal, Punjab Province	6 km from Chunian, adjacent to Balloki-Sulemanki Link Canal, Punjab Province
Project Site	1030 Kanal including 269 Kanal for housing colony	Developed on 1,398 Kanal including 294 Kanal for housing colony
Technology	2 x GT (GE 9HA.01) 2 x HRSG (Alstom) 1 x ST (Alstom)	2 x GT (GE 9HA.01) 2 x HRSG (Hangzhou) 1 x ST (Alstom)
Gross Installed Capacity	1,230.54 MW	1,223.106 MW
Initial Tested Capacity (Net) on RLNG at COD	1,215.176 MW	1,205.046 MW
Thermal Efficiency(Net) on RLNG at COD	62.185%	61.70%

• **Operational Statics and Key Performance Indicators:**

Key Performance Indicators (July 2023-June 2024)	Balloki	HBS
Net energy export (GWh)	6,685	7,931
Demand from NPPC (GWh)	6,782	7,980
Declared Capacity (GWh)	9,625	9,807
Capacity Utilization Factor (%)	70%	81%
Complex Availability (%)	95%	96%

• **Major Maintenance Activities:**

(1) **Haveli Bahadur Shah Plant:**

- ✓ Borescope inspection of GT-1 was performed by LTSA Contractor on 22nd September 2023 and 7th February 2024.
- ✓ Borescope inspection of GT-2 was performed by LTSA Contractor on 28th September 2023 and 13th February 2024.

(2) **Balloki Power Plant:**

- ✓ Borescope inspection of GT-1 was performed by LTSA Contractor on 14th November 2023 and 26th February 2024.
- ✓ GT-2 Combustion Inspection (CI) was carried out from 1st till 13th October 2023.
- ✓ Borescope inspection of Compressor of GT-2 was performed by LTSA Contractor from 5th to 7th October 2023.

• **CSR Activities:**

(1) **HBS Power Plant:**

- ✓ A campaign was launched to train youth in the vicinity of HBS plant in TEVTA Institutes. 100 students were enrolled in different TEVTA Institutes and are getting training. The Company paid the institute's fee and paying stipend of PKR 10,000 per month to each student. The Company has also approved a passing bonus of PKR 45.000/- to each student who successfully completes the training period.
- ✓ Working on methodology to uplift Govt. schools in the vicinity of plant is in progress.

(2) **Balloki Power Plant:**

- ✓ A comprehensive awareness campaign was launched to train youth in the vicinity of Balloki Power Plant in TEVTA Institutes. 75 students were enrolled in different TEVTA Institutes and are getting training. The Company paid the institute's fee and paying stipend of PKR 10,000 per month to each student. The Company has also approved a passing bonus of PKR 45.000/- to each student who successfully completes the training period.

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- ✓ Working on the methodology to uplift Govt. schools in the vicinity of plant is in progress.

• Progress on Finance Plan

During FY 2023-24, the Company has achieved its financial targets set out in the Business Plan which are broadly categorized under the following areas:

- ✓ Working capital management;
- ✓ Repayment of long-term loans due in the year;
- ✓ Placement of plants insurance;
- ✓ Arrangement of forex exchange approvals to payout foreign currency liabilities;
- ✓ Compliance with income and sales tax laws, and
- ✓ Achievement of planned profits.

Following is the summary of operating results and financial position of HBS and Balloki power plants individually and Company on consolidated basis:

FY 2023-24	HBS Plant	Balloki Plant	Total
<i>Rs. In billion</i>	-----Un-audited-----		
Revenue	220	192	412
Cost of Sales	188	163	351
Gross Profit	32	29	61
Delay Payment Charges	23	20	43
Financial Charges	13	13	26
Net profit after tax	42	36	78

FY 2023-24	HBS Plant	Balloki Plant	Total
<i>Rs. In billion</i>	-----Un-audited-----		
Non-current assets	77	74	151
Current assets	198	168	366
Current liabilities	73	75	148
Non-Current Liabilities	10	12	22
Share capital and reserves	192	156	348

17. POWER HOLDING LIMITED (PHL)

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 the prevailing acute power shortage in the country, 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.



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 is wholly owned by the Government of Pakistan and is working under the administrative control of Ministry of Energy (Power Division).

Pursuant to the approval of the Economic Coordination Committee (ECC) of the Cabinet, Syndicated Term Finance Facilities have been executed. The terms and the conditions of the facilities have also been 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 outstanding PHL financing facilities as at 30-06-2024 is re-produced below:

Sr. No.	Facility	Outstanding Amount	Tenor/ Grace Period	Pricing	Principal Repayment Responsibility
1	82.00 Bln PPTFCs				
	Rs 82.00 bln		7 year / 3 year	6MK + 1.00%	Principal has been settled while overdue M-up is rolled over till June-2026

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2	200.00 Bln PES-I				
	Rs. 200.00 bln PES-I	200,000,000,000	10 Year (Bullet Maturity)	6MK+2% (1.20% rebate on payment in 30 days)	Finance Division
3	199.9668 Bln PES-II				
	Rs. 199.9668 bln PES-II	199,966,800,000	10 Year (Bullet Maturity)	6MK - 0.10%	Power Sector
4	Rs. 12.50 bln (I) (dd 31-03-23)				
	Rs. 12.50 bln (I)	12,500,000,000	5 year / 2 year	3MK+1.20% (0.60% rebate on payment in 30 days)	Finance Division
5	Rs. 44.534 bln (dd 31-03-23)				
	Rs. 44.534 bln	44,533,852,446	5 year / 2 year	3MK+1.20% (0.60% rebate on payment in 30 days)	Finance Division
6	Rs. 110.283 bln (dd 31-03-23)				
	Rs. 110.283 bln	110,283,333,333	5 year / 2 year	3MK+1.20% (0.60% rebate on payment in 30 days)	Finance Division
7	Rs. 115.969 bln (dd 31-03-23)				
	Rs. 115.969 bln	115,969,466,667	5 year / 2 year	3MK+1.20% (0.60% rebate on payment in 30 days)	Finance Division
Total		683,253,452,436			

During the year under review, PHL has paid principal amounting to Rs. 82.00 billion to Oil & Gas Development Company from budgetary allocation and consequently PHL Debt has been reduced from Rs. 765.253 billion to 683.253 billion as at 30-06-2024.

During FY 2023-24, an amount of Rs. 153.073 billion has been repaid to the lenders on account of mark-up in respect of PHL Debt facilities in coordination with CPPA, out of FCs @ Rs. 3.23 per unit imposed by the Government of Pakistan. Despite financial constraints, the Company was able to perform its prime responsibility of holding the inter-corporate circular debt and executed the financing facilities from the banking system. 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)/ Ministry of Finance.

18. 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:



- ✓ Jamshoro Power Company Ltd. (GENCO-I),
- ✓ Central Power Generation Company Ltd. (GENCO-II),
- ✓ Northern Power Generation Company Ltd. (GENCO-III)
- ✓ 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, NTDC, 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 the 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.

19. 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 2023-24**

Unit No.	Make	Commissioning Date	Installed Capacity MW	Present Capacity MW	Fuel Type	Net Electrical Out During 2023-24 (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 2023-24 (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 2023-24 (Gwh)	Fuel Mix
	F.Oil	-	0%
	Gas	-	0%
	RLNG	-	0%
	Total	-	0%

NEPRA Approved Capacity (MW)	649.02
Plant availability Factor FY 2023-24 (%)	77.78
Plant Average Loading FY 2023-24 (MW)	375
Utilization Factor on NEPRA Approved Capacity (%)	4.32

- **2 x 660 MW Coal Fired Power Project Jamshoro Lot-I (Unit #1 plus Common Facilities)**

EPC-O&M Contract Lot-I:

Lot 1	Construction of Unit 1 including mobilization, site preparation & Common Facilities.	USD 562 Million – EPC already signed on 29.03.2018 (financed by ADB).
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Siemens-HEI Joint Venture came out as the Lowest Evaluated Bidder.

Notice to Proceed (NTP)

Issued on 28th June 2018 (Lot-I) with completion period of 42 months from NTP.

Contractual Completion

28th December 2021

Expected Completion (COD)

31st December 2024

Physical Progress at site (Lot-I)

Overall Progress of the Project	:	95 %
Civil Works	:	94 %
Engineering & Design	:	99 %
Installation & Erection	:	94 %

ADB Loan Status

In Million USD

Loan #	Allocation	Disbursement (Up to 30.06.2024)	Availability Period
3090	658	440.65	31 st December 2024, as requested to ADB through Power Division & EAD
3092	30	15.92	31 st December 2024, as requested to ADB through Power Division & EAD

- **2 x 660 MW Coal Fired Power Project Jamshoro Lot-II (Unit #2 plus remaining Common Facilities)**

EPC-O&M Contract (EPC Plus 5 years O&M Contract):

The bidding scope is split into the following three lots:

Lot 1	Construction of Unit 1 including mobilization, site preparation & Common Facilities.	USD 562 Million – EPC already signed on 28.03.2018 (financed by ADB).
Lot 2	Construction of Unit 2 plus extension of common facilities	USD 303 Million – Still not signed due to unavailability financing arrangements (Financing arrangements in progress).
Lot 3	5-years (O & M of both the units).	USD – 88 Million

- Siemens-HEI Joint Venture came out as the Lowest Evaluated Bidder in all the Lots, including LOT-II;

- The MoU was signed with Arab Coordination Group (SFD, OFID, KFAED & IsDB) on 20.11.2019 to finance LOT-II amounting to USD 303 million, but the loans are not available now;
- JPCL/GHCL requested MoE (Power Division) for decision on the signing of EPC Contract for Lot-II, vide letter No. GHCL/CEO/PMU/5177-78 dated: 02.11.2020;
- The decision of LOT-II is still pending with Power Division.

**20. 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 & licensed capacity is 2402 MW & 1762 MW respectively.

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 grids. These lines from the grids 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. Gas supply is made through Gas Mixing station which is located inside the CPGCL premises. The Gas quota at present from PPL is 158 MMCFD, which is supplied through gas pipelines from Kandhkot gas field.

This complex comprises of River Intake Pumps, Water Treatment Plants, Cooling Towers, Clarified water Tanks, Service water Tanks, Demi Water Storage Tanks, Hydrogen Generating Plant, General Service Air Compressors, Air Compressors for Air Blast Circuit Breakers, Boilers, Heat Recovery Steam Generators, Turbines, Generators, Unit Transformers, Auxiliary Transformers, Auxiliary Equipment for the Plant, Fuel Oil Storage Tanks, Gas Mixing Station, Central Repair Workshop, Administration Building, Training Centre & Ware Houses for each block.

RELEVANT STATISTICS DURING FINANCIAL YEAR 2023-24:

Thermal Power Station, Guddu shared **2,551 million kWh** to the National Grid @ Rs.10~12 per kWh approximately.

Month wise generation for the year 2023-24 is as under:

Month	Net Generation (kWh)
July-23	231,693,256
August-23	317,164,029
Septemer-23	204,509,406
October-23	146,687,500
November-23	132,092,950
December-23	105,187,930
January-24	194,377,550
February-24	233,103,680
March-24	161,762,150
April-24	256,619,870
May-24	261,595,690
June-24	306,064,010
Total FY 2023-24	2,550,858,021

Block	Unit	Net Derated Capacity (MW)	Net Generation (MkWh)	Max: Load (MW)	Availability factor (%)	Load factor (%)	Utilization factor (%)	Corrected Efficiency (%)
II	05-10	530	341.731	235	09.71	16.74	07.15	36.00
V	14-16	720.79	2,209.127	486	46.54	52.27	34.35	36.05
Total		1,250.79	2,550.858	-	-	-	-	-

• **ACTIVITIES AND TARGETS DURING PRECEDING YEAR**

The Outsourcing of O&M of the complex is in process. The financial bid has been opened on 12.07.2024 and Two companies submitted the quotations. The bid is under evaluation with M/s NESPAK and the Complex will be handed over to the successful bidder after completing the codal formalities.

Rehabilitation of ST-16 is in progress. M/s HEI (Harbin Electric International) has carried out the detail assessment for the rehabilitation in consultation of M/s NESPAK. The Tender for rehabilitation of the unit is underway and will be opened on 19.08.2024. Afterward, additional 261MW will be added to the national grid and fuel cost will be reduced from Rs.12 to Rs.8 per kWh.

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

Northern Power Generation Company Limited (NPGCL) consists of three Power Complexes- Thermal Power Station (TPS) Muzaffargarh, Gas Turbine Power Station (GTPS) Faisalabad, and CCPP Nandipur. Generation License of GTPS Faisalabad is expired since 30.06.2022

Main Activities at Thermal Power Plants are their operation and maintenance to achieve to optimal performance and efficiency. The maintenance aspects include Major Overhauling of Turbine and Generator, Annual Boiler Inspection, Combustion Inspection of Gas Turbines and Condenser Cleaning, Transformer Maintenance, Switchgear Maintenance, adherence of control and protection circuits with equipment.

During FY 2023-24, No substantial generation of electricity could be made from NPGCL Plants due to less demand from NPCC (system Operator). However, machines remained available for generation in Standby mode.

• THERMAL POWER STATION MUZAFFARGARH

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

- ✓ Repairing of Hot Box of Boiler.
- ✓ Repairing of Flue Gas Ducts & Air Ducts.
- ✓ Insulation Work of Flue Gas Ducts, Air Ducts & Steam Valves.
- ✓ Cleaning of Condenser Tubes Side A & B with Water Jetting Machine & Metal Rod.
- ✓ Inspection of Governing / Regulation system
- ✓ Main Oil Tank
- ✓ Main Oil Pump Bearings replaced.
- ✓ Inspection of All Filters.
- ✓ Cleaning and replacement of Filter Screens of Circulating cooling Water.
- ✓ Cleaning the pits of cooling Tower.
- ✓ Inspection and maintenance of Excitation System of Unit No.1, 2 & 3.
- ✓ Testing of Generator, Transformer & Excitation system Protection Relays through Secondary Injection.
- ✓ Interlocking Test of Unit No.1, 2 & 3 during the ABIs.
- ✓ Calibration of Axial Displacement Sensor. Calibration of HP, IP and LP relative expansion sensors, Installation of digital recorder on output of these sensors.
- ✓ Preservation of boilers & Replacement of Silica gel.
- ✓ Inspection and preservation of internal parts of boiler drum during ABI.

Phase-II (Unit 5 & 6)

- ✓ Maintenance and repair activities including mechanical and electrical works were carried out to ensure optimal functioning of tube wells of water supply system for the plants. Regular inspections and preventive measures were taken to address any wear and tear or potential issues promptly.
- ✓ Miscellaneous water supply pumps and water drainage pumps repair and maintenance carried out to prevent disruptions and to ensure the efficient operation.
- ✓ The standby Unit-5 was kept in a state of readiness, with all necessary maintenance tasks to ensure its availability. Thorough inspections and necessary testing of the unit’s equipment were carried. Additionally, preservation activities for the boiler drums of both Unit-5 and Unit-6 were conducted to prevent corrosion and other forms of degradation, ensuring their readiness for future use.

• 425 MW CCPP NANDI PUR

- ✓ GT-3 Inlet Filters replaced
- ✓ CI of GT1, GT2 & GT3 was performed
- ✓ Annual Inspection of HRSGs and ST was carried out
- ✓ HP FWP #4 DE Bearing inspection was performed

• CENTRAL TURBINE MAINTENANCE WORKSHOP FAISALABAD

S/N	Description	Quantity
1	Repair/welding of H P Diaphragm Carrier	1 No
2	Repair of Male/Female Contacts of 132KV Isolator	2 Set
3	Sand Blasting, N D T & Balancing of Steam Turbine Rotor	1 No
4	Balancing of Alternator Rotor	1 No
5	Re-blading, N D T & Balancing of Steam Turbine Rotor	1 No
6	Run Out Correction of Hollow Shaft of Cooling Tower Fan	1 No

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7	Seals Removal of H P Diaphragm Carrier Upper / Lower Half	1 No
8	Repair of 14 MW STG Nozzle Chest	1 No
9	Balancing of 25 MW Steam Turbine Rotor	1 No
10	Male/Female Contacts of 132 KV Isolators	3 Set
11	Balancing of Cane Cutter	1 No
12	Repair of ST Rotor (Polishing of journal & chamfering of blades)	1 No
13	Repair/welding of H P Diaphragm Carrier	1 No

• Achievements / Performance

THERMAL POWER STATION MUZAFFARGARH

- Net Generation of 50908119 kWh (July 2023 to June 2024)
- Projected Generation is subject to availability of Fuel and Demand from NPCC Islamabad.

425 MW CCPP NANDI PUR

- Net Generation 932,150,000 kWh (July 2023 to June 2024)
- Projected Generation is subject to availability of Fuel and Demand from NPCC Islamabad.

Statistical Data (July 2023 to June 2024)

Name of Power Station	Net Generation (kWh)	Gas/RLNG Cons. (MMCFT)	Fuel oil Cons. (M.Tons)	Max Load (MW)	Availability Factor (%)	Efficiency Gross (%)
TPS Muzaffargarh						
Unit # 1 to 6	1735169	-	5097	180	94.192	32.33
425 MW CCPP Nandipur						
GT # 1 to 3 & STG	932,150,000	7979.405	-	506	93.17	51.43

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

The 150 MW FBC Power Plant, the sole Power Plant of Lakhra Power Generation Company, which is closed on the decision of Cabinet Committee on Energy (CCoE), in case No. CCE-47/14/202 dated. 10.09.2020, wherein it was decided to close some of the Public Sector Power Plants including Lakhra Power Plant of LPGCL GENCO-IV, Lakhra. Whereas, the Plant was already under shutdown after happening of a fire incident of 20th July 2017, for which the LPGCL Board kept it to retain as it is up to the final decision of GoP.

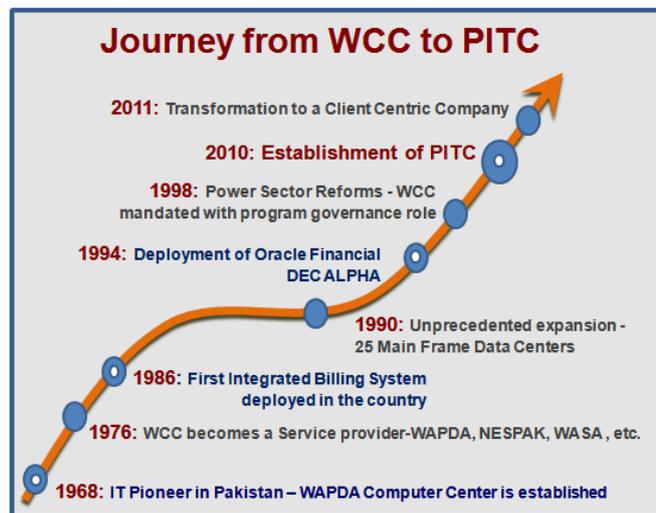
Further, MoE (PD) conveyed its letter no. GPI-01(04)/2023-Lakhra, dated. 07.02.2023, wherein MoE (PD) directed that custody of LPGCL Lakhra may be handed over to JPCL Jamshoro as both are situated in District, Jamshoro and further directed that 36 Nos. Security Guards, who have been adjusted in HESCO and SEPCO, can be relieved to join the concerned DISCOs as the security staff are permanent employees and having substantial pension impact. In this regard, JPCL Jamshoro hired a private Security firm to provide the security cover to secure the LPGCL assets till future course of action is evolved, w.e.f 15.03.2024. Simultaneously, the management of LPGCL relieved 35 Nos. Security personnel on 15.03.2024, to join DISCOs.

In view of the directions of MoE (PD), conveyed through the letters vide MoE (Power Division) U. O. No. GPI-G (GWPW)/2024, dated 07.05.2024 & GHCL, vide letter No. GHCL/HR&Admn-206/2203-08, dated 10.05.2024 referred above, regarding Disposal of old and De-Functional Power Plants of GENCOs at Scrap value, LPGCL has started its working to seek the main task completed within due course of time, after fulfilling all codal formalities. During these activities, previously retained minimum staff (22 in No.) would also be continued to retain with the team(s) working for the aforementioned activities, up to the final Disposal of Power Plant.

24. POWER INFORMATION TECHNOLOGY COMPANY (PITC)

Power Information Technology Company (PITC), Private Limited is a commercial state owned enterprise registered with SECP under section 42 of companies Act 2017. Its mandate is to provide IT services and technology solutions to all DISCOs and power sector entities to improve their efficiency, effectiveness and profitability and additional services as directed by the Federal Govt. under public service obligation agreements. The IT services are provisioned through primary and disaster recovery sites (data centers) which are established at WAPDA House and Aiwan-e-Iqbal, Lahore, respectively. These are offered as Software as a Service (SaaS) model and DISCOs are charged on /consumer /month basis to meet with its operational expenses. The DISCOs pass on these costs to the consumers through quarterly tariff adjustment.

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.

- **Company Business Development Activities (2023-24)**

- a) **Cyber Security Governance Framework and Solution**

- The cyber security framework is one of the major critical information security initiatives deployed in PITC primary and disaster recovery sites (data centers) used to serve DISCOs with IT services and technology solutions. The offered SaaS services do not comply with the IT/OT cyber security standards and are prone to cyber-attacks. The PITC continues to

lead the power sector in making data centralized, available, and shared while maintaining the security of sensitive information.

b) Smart Payment System (SPS) for DISCOs

At present, DISCOs consumers have multiple channels to pay their utility bills e.g. bank counter, online banking, Jazz Cash, Easy Paisa, Raast, 1-Link, post offices and NADRA etc. It's worth noting that 70% cash is collected through online banking channels and is received in DISCOs on t+2 model where liquid cash is transferred after two days to DISCOs accounts. Moreover, banks, NADRA and microfinancing payment gateways charge 8 PKR per bill from DISCOs for the portioning of payment facility to consumers. It's worth noting that for 0.7×34.5 Million = 24 Million consumers, utility companies pay approx. 193 Million PKR per month as service charges to banking channels for t+2. Revenue stream varies from 150 to 350 Billion PKR per month. On the basis 17% daily financial product charges and on average 250 Billion revenue, 232 Million cash value is lost by DISCOs due to t+2 model. The smart payment system (SPS) offered by PITC will help DISCOs to save min 232 Million PKR per month.

- ✓ The proposed SPS (smart payment system) will shape up PITC as sole aggregator and will offer its sandbox APIs for integration with all payment channels in Pakistan on max t+1 model; however, depending on rates if accepted, the payment channels agree on transferring cash same day.
- ✓ Consumers will be facilitated to pay utility bills through any channel.
- ✓ If consumers use RAAST which is state bank of Pakistan official payment gateway, the 8 PKR per bill charges are not levied to DISCOs which will result in saving about 193 Million PKR.

c) E-Services Platform for Consumers (digitalizing consumer services)

This platform will comprises of mobile application (android, iOS) versions, web version and back office processing automation at customer services centers. The key feature of these automated and transparent services to consumer are as under:

- ✓ Registration and verification of consumers with CNIC and OTP through SMS and email on mobile and web platforms
- ✓ Registered users can add, modify, set default meter for real time monitoring of load (current and voltage), energy consumption, payment history and latest up to date estimated bill in case of smart meter
- ✓ Consumer will receive its bill as and when processed by DISCOs through push notification in the app
- ✓ Consumer can make payment using any payment gateways, or bank electronically as well as advance payments
- ✓ Consumer can pay all type of demand notices issued through this e-services platform
- ✓ Consumer can initiate services : new connection, change of name, load tariff, meter reading correction, due date extension, instalments from through mobile or web application in simplified process
- ✓ Consumer can register complaint on initiated service if its not completed within time or not satisfied as well as can withdraw/cancel its request if it is in defined early stages

- ✓ Consumer activities history log is maintained
- ✓ Consumer can estimate its bill through a bill estimator with 44 effective tariffs
- ✓ Consumers can target their consumption through energy advisor by capping either consumption or bill amount. This will serve as a technique for demand side management to shave off the peak as well as educate user how to reduce its electricity bill
- ✓ Consumer can live chat with CCMS (118) consumer regarding complaints or follow up
- ✓ Customer services will receive all requests from the consumers and electronically verify the steps to ease out and facilitate in paperless processing mode with digitally signed eFiles.

This service will revolutionize customer services and will bring transparency, improve revenues and losses. This eService platform is being developed under USAID project but subsequently will be maintained and run by PITC by customizing its source code for additional services.

● **Company Business Operational Activities (2023-24)**

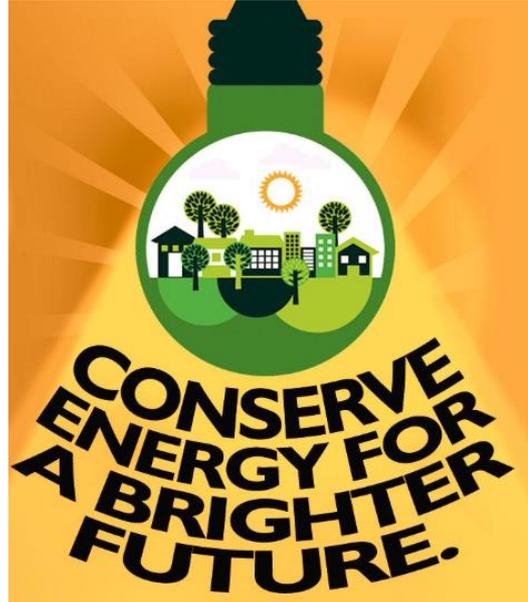
Following operational activities were successfully implemented:

AJK electricity department is in process of converting in to 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. Keepin g in view the data flow and organizational structure of Barqiat deptt. IBS has been modified.

- ✓ IBS Development support to all DISCOs, AJKED and SIE
- ✓ IBS Support for 10 DISCOs and AJKED
- ✓ Federal Complaint Cell (FCC), DISCOs websites, PMDU, Payroll, EPF,
- ✓ New Deployment of Payroll for WAPDA, TESCO, PESCO, FMS for TESCO
Development of EPF modules for field offices
- ✓ LDI Support for LDI project to all DISCOs, AJKED and SIE
- ✓ Operational Activity (System and Network Support)
- ✓ CCMS Operations
- ✓ Mobile Application Enhancement /Development
- ✓ MND/MIS/Consumer Profile Deployment Support
- ✓ MIS/MND Development Support for 10 DISCOs
- ✓ Upgrading of hardware for MND and integration of central storage for all disco's, for reporting and archiving of historical data.
- ✓ Installation of server machines
- ✓ Installation of Storage and configuration
- ✓ Provisioning of Network

24. NATIONAL ENERGY EFFICIENCY AND CONSERVATION AUTHORITY (NEECA)

Energy Efficiency and Conservation (EE&C) is very vital for sustainable development of the Power Sector of the Country. The increasing energy prices, exchange rate fluctuation, growing demand for energy, and scarcity of indigenous resources requires Pakistan to strive for implementing the higher EE&C measures. EE&C improvement is the easiest and most cost-effective way to improve the energy security and sustainability of the country. EE&C should be cornerstone for the sector's planning and policy formulation as saving one unit is always cheaper than producing one unit of energy.



EE&C is also critical and most cost-effective way to fight the Climate Change because reduction in the energy consumption lowers the amount of Green House Gas (GHG) emissions. This can produce the co-benefits of industrial competitiveness, reduction in energy import bill, transition to clean energy, improvement in access to energy, and achieving the Nationally Determined Contributions (NDCs) target¹ as well as Sustainable Development Goal (SDG) 07². Moreover, EE&C is also our Religious Obligation as Muslims because Islam as a way of life puts very strong emphasis on conservation of resources and avoiding extravagance.

Integration of EE&C in the planning and policy formulation of Power Sector remained an unattended agenda. Resultantly, sector has become a conundrum faced with challenges of high prices, peak demand and circular debt which is often addressed through different tariff regimes. Seasonally, in peak summer days the demand crosses 30,000 MW, requiring additional capacity and capacity payments, whereas, in winter it falls below 12,500 MW. The demand-side management through EE&C measures can be a silver bullet for peak shaving.

In the wake of the energy crisis, EE&C once again came into focus and the National Energy Efficiency and Conservation Authority (NEECA) was established through promulgation of the NEECA Act 2016. NEECA serves as a federal focal agency mandated for Initiating,

¹ Pakistan has set ambitious targets of overall 50% reduction of its projected emissions by 2030 (15% from own resources and 35% by financing from international partners)

² SDG 07 aims to double the global rate of improvement in energy efficiency by 2030, earlier it was Sustainable Energy for all initiative.

Catalyzing, and Coordinating all Energy Efficiency and Conservation activities in all Sectors of the Economy.

Realizing the importance of EE&C in the Power Sector, GOP has included EE&C as one of the six (06) key guiding principles of National Electricity Policy 2021. Role of EE&C is vital for achieving all the above-mentioned goals for the power sector on least cost basis. Section 4.1.1 of the National Electricity Policy 2021 stipulates as under:-

“Efficiency will be progressively increased across the entire value chain of the sector. This will be done, broadly, by gradually improving efficiency in the generation fleet, system operations, optimum utilization of the fuel base, reduction in Transmission and Distribution (T&D) losses, and improvement in collections and demand side management, conservation, sound governance practices including decentralization, etc.”

In view of the above, GOP has also included EE&C as a Priority Area (Priority Area-17) in the National Electricity Plan 2023-27 recently approved by the Cabinet Committee on Energy (CCoE).

NEECA is continuously striving hard and has taken substantial steps to institutionalize and implement all the possible EE&C measures in the country including formulation and approval by the Federal Cabinet of the following:-

- National Energy Efficiency and Conservation (NEEC) Policy 2023;
- National Energy Efficiency and Conservation (NEEC) Action Plan 2023-2030;
- Minimum Energy Performance Standards (MEPS) and Star Rating Labeling Regime for Fans, Refrigerators, Air Conditioners, Motors and LED Lamps;
- Banning of the Incandescent Bulbs; and
- Energy Conservation Building Code (ECBC) 2023.

• **National Energy Efficiency and Conservation (NEEC) Policy 2023:**

Integration of Energy Efficiency and Conservation in energy planning and policy formulation remained an unattended agenda. The Energy sector has become a conundrum faced with challenges of high prices, peak demand, and circular debt which is often addressed through change in tariff regimes. Seasonally, in peak summer days there is a shortage of electricity, whereas in peak winter days country faces gas shortages. For the rest of the year, the demand and supply remain mostly stable, however, capacity additions result in capacity payments in the power sector. The demand-side management through EE&C measures can be a silver bullet for peak shaving. Similarly, the integration of EE&C measures in different sectors of the economy can be instrumental to achieving sustainability goals. As per Business-as-Usual scenario, the primary energy supply of Pakistan is expected to be 116 MTOE by 2030.

However, the implementation of national energy efficiency and conservation policy sets the saving target of 9 MTOE, with reduction in the GHG emissions by 35 MTCO₂e.

The National Energy Efficiency and Conservation Policy 2023 identifies mechanisms to ensure deep-rooted institutionalization, operationalization, and implementation of EE&C in all the economic sectors of the country including Power Sector.

● **National Energy Efficiency and Conservation (NEEC) Action Plan 2023-2030:**

In the NEEC Action Plan, 29 priority actions have been defined across different sectors of the economy including Power Sector. The Action Plan is also projected to achieve savings of 9 Mtoe cumulatively by 2030, for which 8 billion USD of investment potential has been mapped. The cumulative financial savings by 2030 will be 6.4 billion USD at 2022 prices, where the effect of certain savings will continue through to 2050 in terms of economic transition towards net-zero emissions.

● **Labeling Regime/MEPS for Electrical Appliances:**

NEECA has developed and notified Energy Labelling regime through Pakistan Energy Label Regulations 2023 for five (5) electrical appliances namely Fans, Room Air Conditioners, Household Refrigerators, Motors, and LED Light. These regulations specify Minimum Energy Performance Standard (MEPS) and star rating-based energy performance labeling.

Upon successful implementation as per the NEECA Action Plan, this labeling regime for five electrical appliances has the potential to save 498 Million USD per year.

Intervention	Annual Energy Savings (Million Units)	Annual Impact (Million USD)
Implementation of MEPS for Air-Conditioner	135	7
Implementation of MEPS for Refrigerators	1,073	53
Implementation of MEPS for Fans	388	25
Implementation of MEPS for LEDs	5,265	258
Implementation of MEPS for Motors	9,000	155



With the support of NEECA, the Ministry of Science & Technology has also issued SRO 546(I)/2023 to ban the manufacturing and import of inefficient fans w.e.f. 1st January, 2024.

- **Banning of the Incandescent Bulbs and Compact Fluorescent Lamps:**

The Ministry of Science and Technology with the support of NEECA has banned the manufacture, sale, and import of Incandescent Bulbs and Compact Fluorescent Lamps vide SRO 547(I)/2023. This legal measure is projected to save approximately 1,890 GWh of electricity annually.

- **Energy Conservation Building Code (ECBC) 2023:**

The building sector (residential, commercial, and public) of Pakistan is continuously growing for the past two decades at a compound annual growth rate of 12.3%. This sector consumes around 54% of the total electricity produced in the country and most of this electricity is consumed in the cooling or sometimes heating load due to inefficient design and construction material of the building.

To solve the abovementioned problem, NEECA has developed the ECBC-2023 through the revision of the Building Code of Pakistan (Energy Provisions-2011) to incorporate State of the art technology for implementation of EE&C measure. The ECBC-2023 sets out minimum requirements for energy efficient design and energy conservation techniques for construction of buildings, as well as for the energy efficient operation of building systems and equipment.

The ECBC-2023 offers energy efficient building designs, use of energy efficient appliances, renewable energy, retrofitting of the existing buildings, support to e-mobility and monitoring systems. The implementation of ECBC-2023 can bring a significant reduction (15-40%) in electricity consumption of our building sector and to achieve the net zero emission targets to mitigate the carbon footprints.

- **Prime Minister's Fan Replacement Program**

Pakistan's cooling demand exceeds 17,000 MW, with fans contributing approximately 65%, or around 11,700 MW, due to their widespread availability and use. Studies indicate that Pakistan has a stock of 147 million installed fans, with an estimated 60%, or 88 million fans, operating for considerable periods during the summer season. These fans, utilizing outdated and inefficient technologies, consume energy very inefficiently.

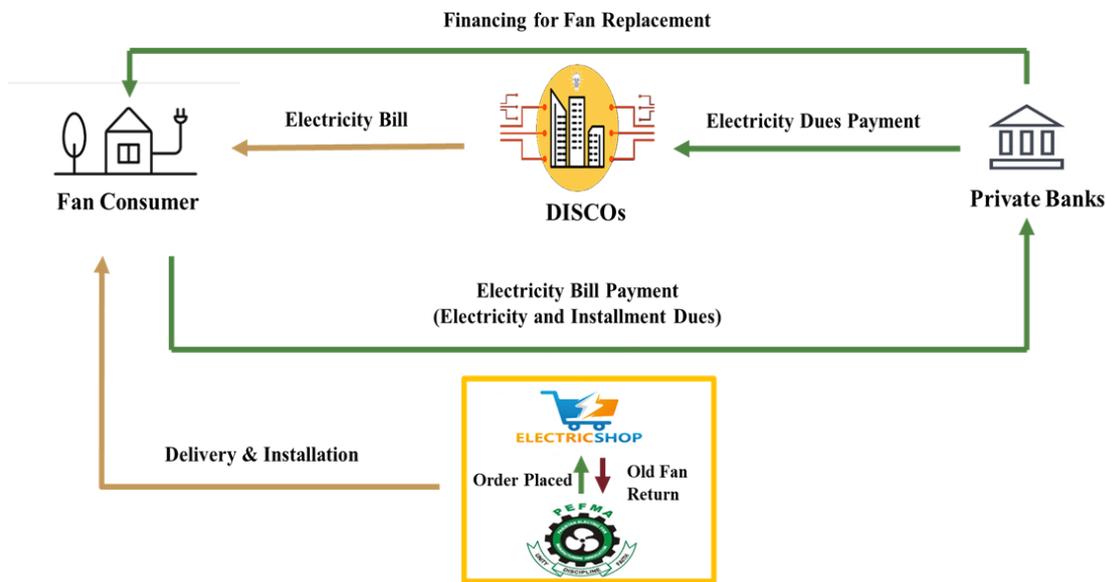
Implementing a comprehensive Fan Replacement Program could reduce the cooling load by approximately 6,000 to 8,000 MW, owing to the 70-90 Watts difference between efficient and inefficient fans.

The Prime Minister's Fan Replacement Program, spearheaded by the Ministry of Energy (Power Division), is a landmark initiative aimed at replacing 88 million inefficient fans nationwide with NEECA-labeled energy-efficient fans. This program, spanning over a period

of 10 years, will target twenty-two million individual electricity consumers who have maintained a good rating and have never defaulted on their electricity bill payments.

The implementation methodology involves a tripartite agreement among commercial banks, DISCOs, and consumers. Commercial banks will finance the program, DISCOs will share consumer creditworthiness with the banks and vendors through an IT-based online portal, and the consumers will be the third party in this agreement. The program will offer an on-bill financing mechanism to DISCOs customers, allowing them to replace their fans through easy installments. This approach highlights the ease and accessibility of financing that the program will provide for fan replacement.

DISCOS ON-BILL FINANCING



- Electric Vehicles Charging Infrastructure:**

The Government of Pakistan has formulated Electric Vehicle Policy in 2019 with an EV penetration target of 30% of the new sales by 2030 and mandated NEECA and NTDC for standardization and compliance of charging infrastructure in Pakistan. Robust and sustainable EV Charging Infrastructure is critical to catalyze the widespread adoption of EVs in any country. Forgoing in view, to facilitate the sustainable and standardized development of EV Charging Infrastructure in Pakistan, NEECA has drafted Electric Vehicle (EV) Charging Infrastructure Regulations in year 2023.

NEECA, with the collaboration and support of UNDP, further refined the EV Charging Infrastructure Regulations and expanded their scope by including separate Chapters related to (i). Application, (ii). Site Selection, (iii). Battery Swapping, (iv). Grid Connectivity, (v).

Safety, (vi). Operation and Maintenance, and (vii). Enforcement. Further, NEECA also shared it with all the relevant stakeholders for their feedback and comments. Stakeholders Consultation Workshops were also conducted at Islamabad and all the provincial capitals. In these regards, useful comments and feedback were also received from more than twelve government and private stakeholders and amendments were made in the Regulations accordingly. The Electric Vehicle (EV) Charging Infrastructure Regulations – 2024 are currently with the NEECA Board for approval.

It is worth mentioning that these EV charging regulations are a significant component of the Special Investment Facilitation Council's (SIFC) "Electric Vehicles Ecosystem", which aims to create a conducive environment for the growth and adoption of electric vehicles in Pakistan.

- **Collaboration with the Danish Energy Agency: The Danish Energy Transition Initiative**

NEECA has partnered with the Danish Energy Agency (DEA) under the Danish Energy Transition Initiative (DETI) to enhance energy efficiency in Pakistan's energy-intensive industries. This collaboration aims to reshape Pakistan's energy landscape through technical expertise, sustainable energy solutions, and the successful Danish Energy Model.

- **Key Activities for 2024**

Workshops and Technical Assistance:

Conduct of workshops and bilateral meetings with the stakeholders.

Provision of technical assistance to industries in energy management and ISO 50001 Energy Management System certification.

Pilot Voluntary Agreement Scheme:

Introducing a pilot voluntary agreement scheme for energy-intensive industries based on the Danish Energy Model. This scheme will encourage industries to commit voluntarily to specific energy-saving targets. The initiative aims to foster collaboration between the government and industries, incentivizing companies to adopt more efficient practices through support and guidance from the DEA and NEECA.

Knowledge Sharing:

Sharing experiences from other DEA partner countries like Vietnam, Indonesia, Mexico, and Ukraine. This exchange of knowledge will help Pakistan adopt best practices and innovative solutions from around the world, further enhancing the efficacy of its energy transition efforts.

Impact

This partnership will help reduce energy consumption, lower greenhouse gas emissions, and promote sustainable industrial growth. By adopting international best practices and standards, NEECA aims to drive significant improvements in energy efficiency and conservation.

• **ENERGY CONSERVATION FUND (ECF)**

Energy Conservation Fund (ECF) is an energy/ climate mitigation dedicated company duly registered with the Securities and Exchange Commission of Pakistan (SECP) and working under National Energy Efficiency and Conservation Authority (NEECA). ECF, working under the control of Ministry of Energy (Power Division), having close coordination with International as well as local Donor Agencies and effective relationship with financial institutions, make it an appealing platform for the successful execution and implementation of energy efficiency and conservation measures nationwide.

• **Major Achievements/ Activities**

Training of Trainers (ToT) Program

NEECA is in process to approve the rules/ regulations for Energy Auditors and Managers Regime. To execute that regime, the trainers for that program needs to be developed. Therefore, ECF has launched ToT Program which prepares master trainers for Energy Mangers and Auditors Training Regime that will become certified Auditors and Managers, with a particular topic or skill, or with training overall. A ToT workshop will build a pool of competent instructors who can then teach the exclusive material to professionals.

Energy Conservation Fund has successfully conducted Training of Trainer Program in which a total of 244 candidates successfully completed the required training. The candidates on successful clearance of NEECA examination conducted at the end of the trainings, were awarded NEECA Certified Master Trainer Certificates.

Registration of Energy Auditing Firms

To address the demand of industrial sector which has repeatedly approached to NEECA/ ECF to provide or endorse organizations/ firms offering quality energy auditing services, ECF has initiated the pre-qualification and enlistment of such Energy Auditing firm/Service companies having capabilities to undertake energy audits in various industries. Currently, eight companies/ firms have been duly registered with NEECA after exhibiting the necessary expertise and tools for the successful and effective implementation of required energy efficiency initiatives keeping into perspective the best practices in the industry as well as globally.

The registration/ enlistment of Energy Auditing Firms providing upto the mark energy efficiency services will create a huge market of ESCOs potentially providing services in all sectors of industries. In future, almost fifty more companies will be registered as more than fifty companies have expressed their intent/ applied for registration.

Energy Audits of Public Buildings based on Super ESCO Model

In order to implement, catalyze, and coordinate the energy efficiency and conservation programs and projects across all the major economic sectors of Pakistan i.e. buildings, industry, power, agriculture, and transport, ECF has come up with the model of Super ESCO; an entity set up by government/ public sector that coordinates/ supervise innovative financing mechanisms, to its clients, and subcontracts project implementation to private-sector ESCOs that guarantee the deemed savings to be realized. UNDP, having worked extensively in this domain across the regions, is providing support to ECF in the structuring of the transactions, with private sector organizations.

ECF will not only moderate's stakeholders' risks but will also help build trust, including between private ESCOs and public sector client/end user. In some cases, ECF may provide risk guarantees for ESCO projects, leases energy efficiency equipment, and facilitates interactions among private sector ESCOs, financial institutions, and end customers. The salient features of the proposed model are described below in the block diagram.

Awareness of Energy Efficiency

Academic Institutions level awareness are about more than just participation and winning prizes; they can play a major role in uncovering and nurturing natural talents of the students and help them produce creative and out of the box ideas for promotion of Energy Efficiency and Conservation. This is especially true of the awareness where the students find a platform to display their creative and artistic abilities; for children and teenagers, this can often have a life-changing effect.



To inculcate ideas and concepts of energy efficiency and conservation from grass root level, Energy Conservation Fund has planned to conduct energy efficiency awareness in Academic Institutions. Until now, a total of 59 such sessions have been conducted either in educational institutions or in NEECA Building.

MOUs/ Collaboration for Energy Efficiency & Conservation Measures

ECF under the umbrella of NEECA has jointly signed MOUs with prestigious educational institutions including Lahore University of Management Sciences, Foundation University, Balochistan University of Information Technology, Engineering and Management Sciences, Hazara University as well as leading entity in hospitality industry i.e. Hashoo Group as well as representative body of builders and developers in Pakistan i.e. Association of Builders and Developers, in order to roll-out the green initiatives culture across the country.

Public Registry System – (Appliance Information Management System)

With the support of United Nations Environment Program (UNEP), ECF has developed a web portal designed for the registration of energy efficient lighting manufacturers and their products, ensuring compliance with Minimum Energy Performance Standards (MEPS). This portal will also support the registration of energy efficient fans manufacturers and their products to be offered under the Prime Minister’s Fan Replacement Program.

Building upon the success of the current web portal, ECF aims to further enrich the platform by expanding its capabilities to accommodate a wider range of products from various sectors to seamlessly integrate additional products into the portal's framework, enhancing user experience and facilitating a streamlined registration process. This initiative represents a significant step towards promoting sustainable practices and reducing energy consumption across industries. The enhanced web portal will contribute to ECF commitment to Pakistan Energy Labelling Regulations 2023.

Revolving Guarantee Fund (RGF)

The Global Environment Facility (GEF) carried out the project titled “Delivering the Transition to Energy Efficient Lighting in Residential, Commercial, Industrial and Outdoor Sectors in Pakistan” through United Nations Environment Programme (UNEP) and NEECA. Under one of the component of the aforementioned project, different financing tools were analyzed in consultation with the banks /leasing companies to establish lighting funding window through the existing ECF whose scope is further broadened to other electrical appliances keeping into the perspective the huge energy savings potential in the usage of those electrical appliances.

Revolving Guarantee Fund (RGF) will play a substantial role by partially mitigating risk of Financial Institutions (FI) undertaking the risks of energy efficiency (EE) initiatives. Such guarantee acts as a risk-sharing mechanism that will provide FIs with partial coverage (10%) of risk exposure against loans made for EE activities. This mechanism can play a role in

mitigating the financiers' risk perceptions associated with the lending for new technologies and new business models associated with EE projects. It can also help in promoting the need to collateralize future cash flows from future energy savings rather than the value of the asset or collateral in question.

- **“Preparation of Chapters of the Pakistan’s First Biennial Update Report Under UNFCCC” MOCC Project:**

The objective of the project was to fulfill the decisions of Conference of the Parties (COP) 16 & 17, which require developing countries to submit biennial update reports containing updates of national greenhouse gas inventories, including a national inventory report and information on mitigation actions, needs and support received.

- NEECA/ ECF successfully carried out the subject project in collaboration with Ministry of Climate Change (MOCC) with the funding of \$ 50,400/-. The outcomes generated from this project are as follows:
- Information on different potential sectoral stakeholders to enable the formulation, registration and implementation of NAMAs including the establishment of the national registry collected and consolidate.
- Different sectors with potential for mitigation identified and included in NAMA registry.
- Relevant information regarding the mitigation actions or group of actions being developed, collected and analyzed.
- Mitigation actions or groups of actions being developed, including name, sector, coverage, goals, objectives, methodologies, inputs and outputs described.
- Cost Benefit Analysis of the mitigation actions being developed until 2030 conducted.

- **“Preparation of Various Chapters Under Pakistan’s Third National Communications On Climate Change” MOCC Project:**

The objective of the project is to enable Pakistan to prepare and submit its third national communication on climate change as required under Article 12 of the UNFCCC (The United Nations Framework Convention on Climate Change) and based on the COP 8 guidelines for National Communications for Non-Annex-I parties (decision 17/ CP 8). MOCC has tasked this project to NEECA/ ECF with the funding of \$ 58,100/- with the outcomes/ results to be achieved as follows:

- Conduct capacity building session/ training for the mitigation assessment technical working group members, including supporting their participation in the relevant sub-regional/ regional/ international training workshops on mitigation assessment.

- Describe past and present initiatives of Government of Pakistan to address climate change including policy, institutional, programme/ project related activities and other priorities.
- Based on the analysis of source category conducted during the inventory process, identify the leading emitter/ remover of greenhouse gases, present an analysis of Pakistan's current status as "emitter" and key sources of emissions including energy, industries, forests, agriculture, waste etc.
- Develop national emissions trends particularly for key source categories.
- Assess opportunities or measures for reducing emissions or enhancing sinks in the identified categories.
- Identify and utilize cost-effective and efficient cost benefit assessment tools to rank and prioritize the opportunities or measures to reduce emissions or enhance sinks.
- Review and update mitigation options for selected and future scenarios, which contribute to the medium-long term low emission development objectives.
- Write the report on the mitigation assessment and include it in the Third National Communication (TNC) for submission to the UNFCCC.

- **Extension of RLF/ RGF to Include All Sectors of Economy**

ECF has been established to provide financial access and support to all sectors of the economy for the promotion of energy efficiency and conservation in Pakistan. The high capital costs of EE&C projects and measures, though with significantly lucrative rate of returns on investment, are hampering the industrial as well as building sectors' efforts to achieve reasonable financial performance through reduced energy costs thus affecting the overall economic growth as well as national performance on the sustainable development goals.

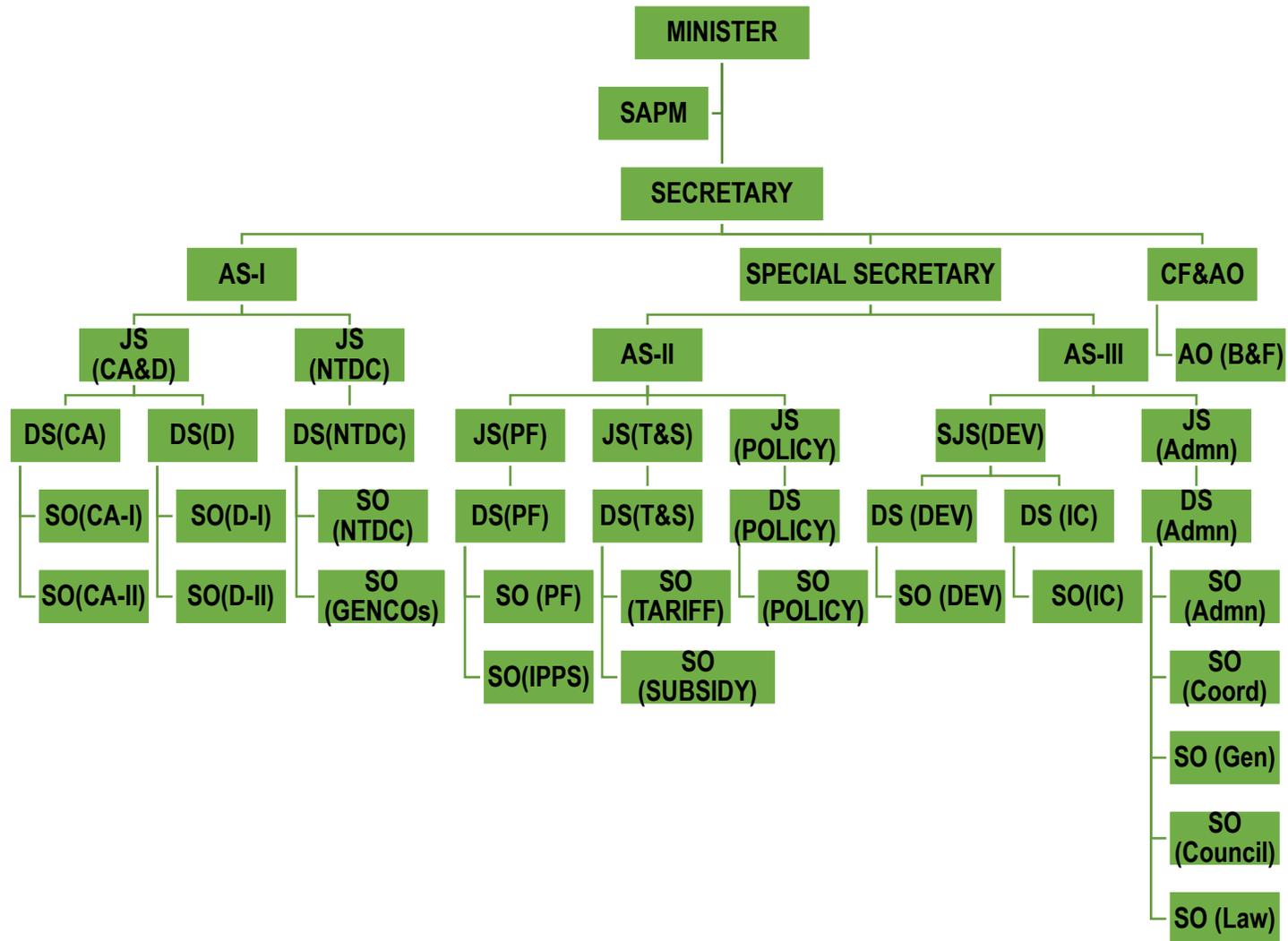
Therefore ECF, in collaboration with Banks /Development Finance Institutions/ Leasing companies, will be leasing / financing of NEECA labelled energy efficient equipment to SMEs and households under a Revolving Loan Fund facility in-line with the mandate of NEECA and the Green Banking Guideline (GBG) of the State Bank of Pakistan (SBP).

The RGF/ RLF, proposed by ECF, will be available for leasing/ financing a broad range of energy efficient equipment. This RLF facility will also extend soft loans to household consumers to access energy efficient home appliances (both electric and gas based) and proposes recovery through on-bill financing in collaboration with electricity distribution companies adopting an integrated and cost-effective approach. This facility is expected to jump start promotion of energy efficient equipment in Pakistan which will result in reducing the high maintenance cost of the National Grid and low cost of energy for SMEs and households.



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SAPM (Special Assistant to Prime Minister), CA & D (Corporate Affairs and DISCOs), AS (Additional Secretary), D (DISCOs), PF (Power Finance), T&S (Tariff & Subsidy), Dev (Development), IC (International Coordination), B&F (Budget & Account), CF & AO (Chief Financial & Accounts Officer), Gen (General), Coord (Coordination)