

# YEAR BOOK



Ministry of Energy

(Power Division)

## 2022-23





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## PREFACE

The Year Book for the Year 2022-23 has been prepared in accordance with rule 25 (3) of the Rules of Business, 1973, which stipulates that at the beginning of each Financial Year, each Division shall, for the information of the Cabinet and General Public prepare a permanent record in the form of Year Book which shall contain:

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

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

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

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

## INTRODUCTION

Ministry of Energy (Power Division) was formed in August, 2017 with bifurcation of Ministry of Water and Power into Ministry of Water Resources and Power Division was placed under newly created Ministry of Energy. Ministry of Energy consists of two Divisions namely Power Division and Petroleum Division.

Ministry of Energy (Power Division) has been mainly dealing with the subject of electricity, which includes generation, transmission. Right now, there are 23 public sector companies and 01 statutory bodies working under the Power Division. The power polices, power finance, operational, tariff, subsidy and taxation matters pertaining to the 23 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 other wings namely Administration wing and Finance & Accounts wing.

Ministry of Energy (Power Division) 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. This strategy will set Pakistan on a trajectory of rapid economic growth and social development. Simultaneously, it will address the key challenges of the power sector in order to provide much needed relief to the citizens of Pakistan. At the same time, it is essential to mention that the IPPs are contributing a great deal in fulfilling the electricity needs of the country. Further, in order to encourage higher Power consumption, the Government has shown its willingness to lay emphasize on efficient supply of electricity for maintaining /reviving economic activities in the country.

## MESSAGE FROM THE MINISTER FOR POWER DIVISION

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



The Government is in pursuit of overcoming energy crisis both in short and long term. Similarly, Government is in the effort to end the gap between demand and supply of electricity and bring down the high prices of Energy. For this purpose Ministry of Energy (Power Division) has given preference to renewable energy sources. Government has taken several supportive steps for deployment of net metering systems.. Online connection application system has been introduced to enable general public to submit application for new connection through internet

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

(Muhammad Ali)  
Minister for Power Division

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

The Year Book 2022-23 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 2022-23 with the resolve that we will be able to eradicate the menace of energy crisis.

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



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

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

The book gives an overview of the activities, achievements, progress and future goals of the Power Division and its attached Organizations/ Companies working under its administrative control for the Financial Year 2022-23.

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

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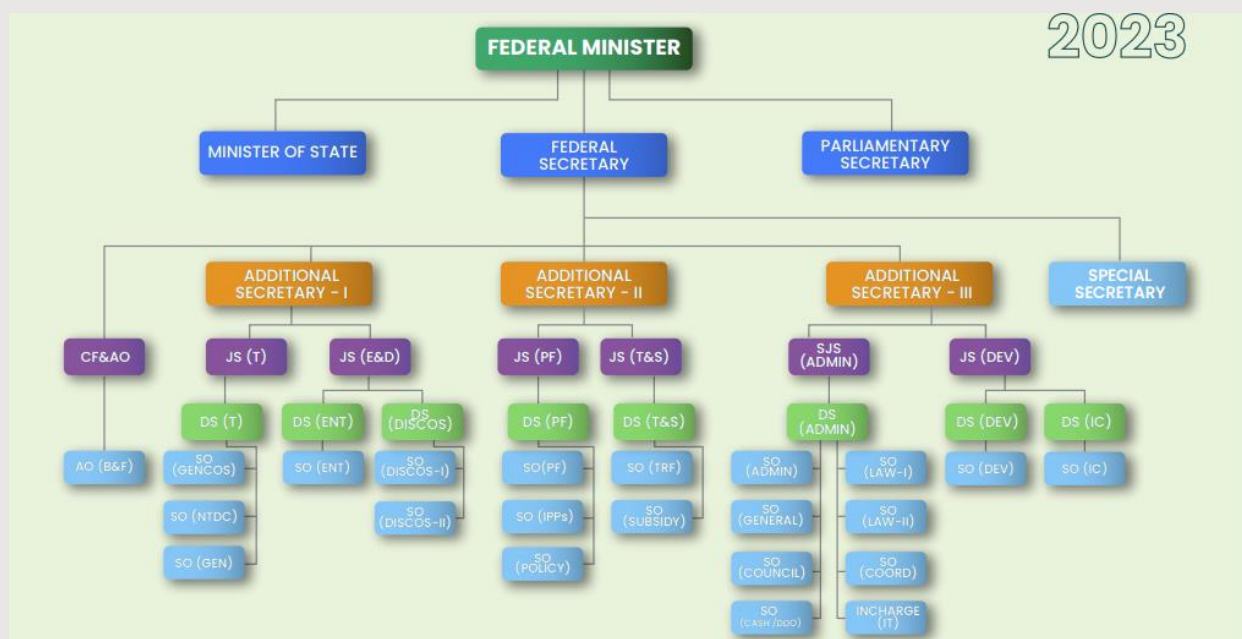
**MANDATE AS GIVEN IN THE RULES OF BUSINESS, 1973**

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

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



## ORGANOGRAM & STRUCTURE OF POWER DIVISION



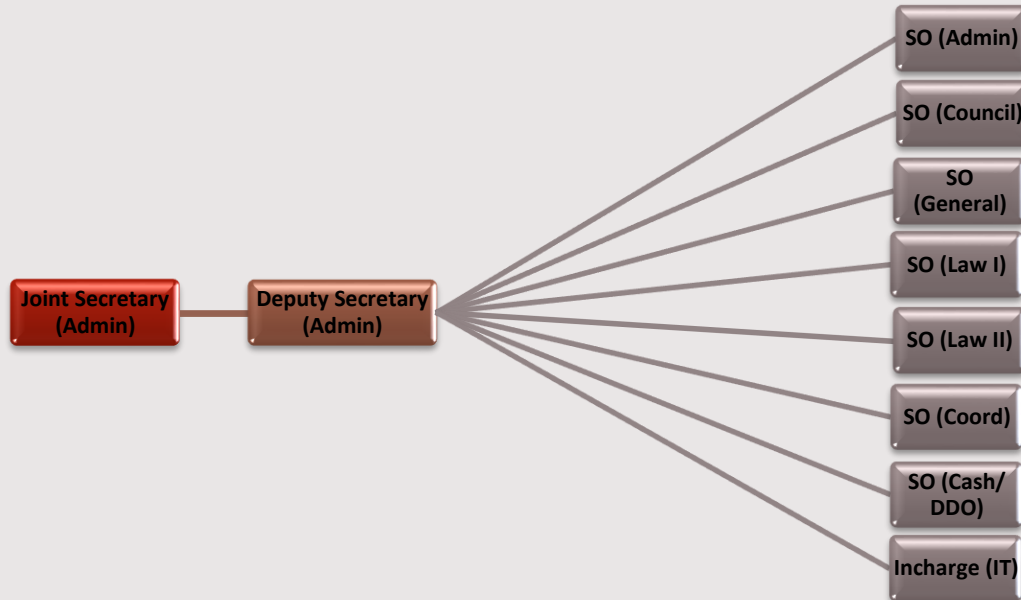
### STRUCTURE OF POWER DIVISION

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

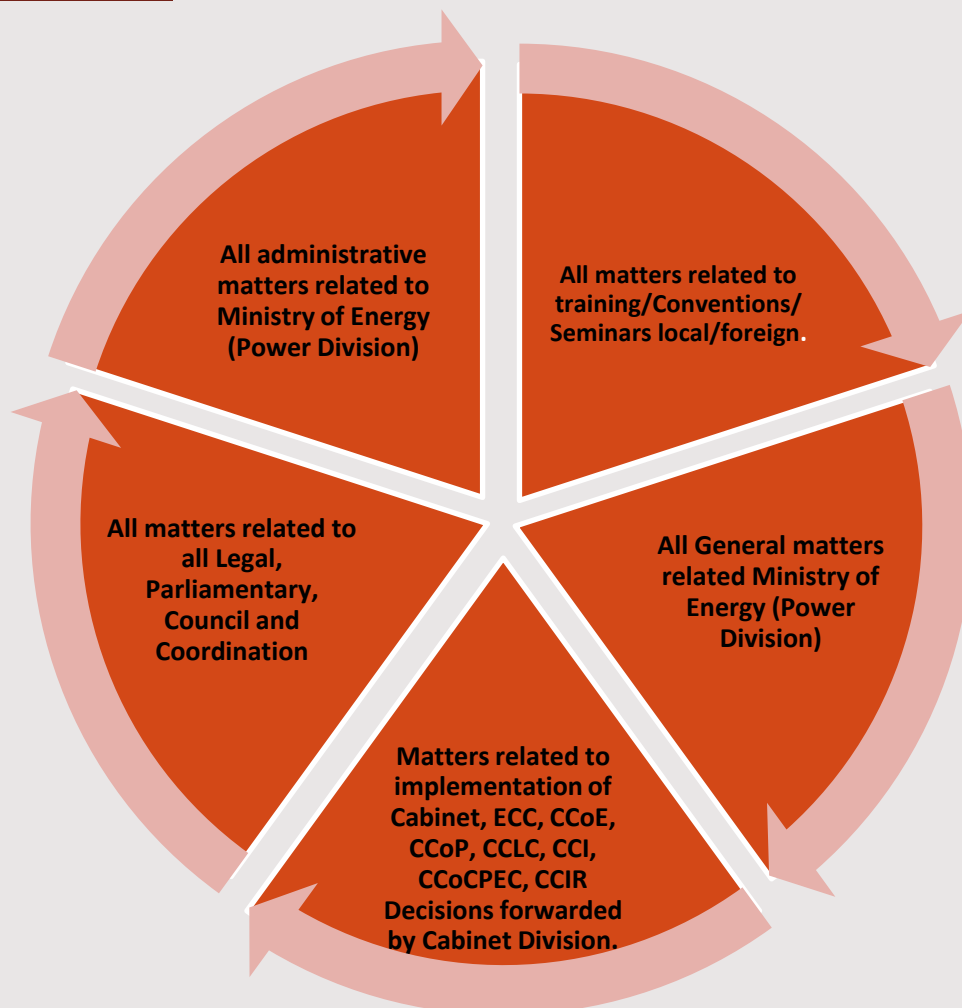
1. **Administration Wing (AdminWing).**
2. **Power Finance Wing (PF Wing).**
3. **Transmission Wing (T Wing).**
4. **Entities and DISCOs Wing (E & D Wing).**
5. **Development Wing (Dev Wing).**
6. **Tariff & Subsidy Wing (T & S Wing).**

**1. ADMINISTRATION WING (A WING)**

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

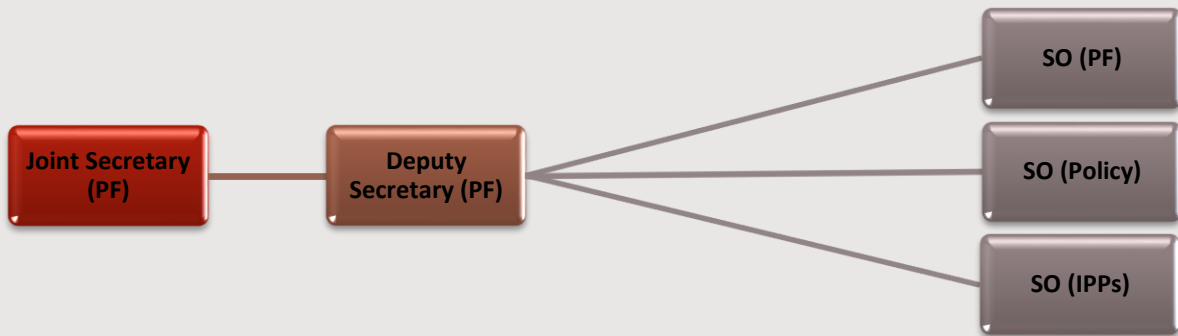


**Functions of Admin Wing**

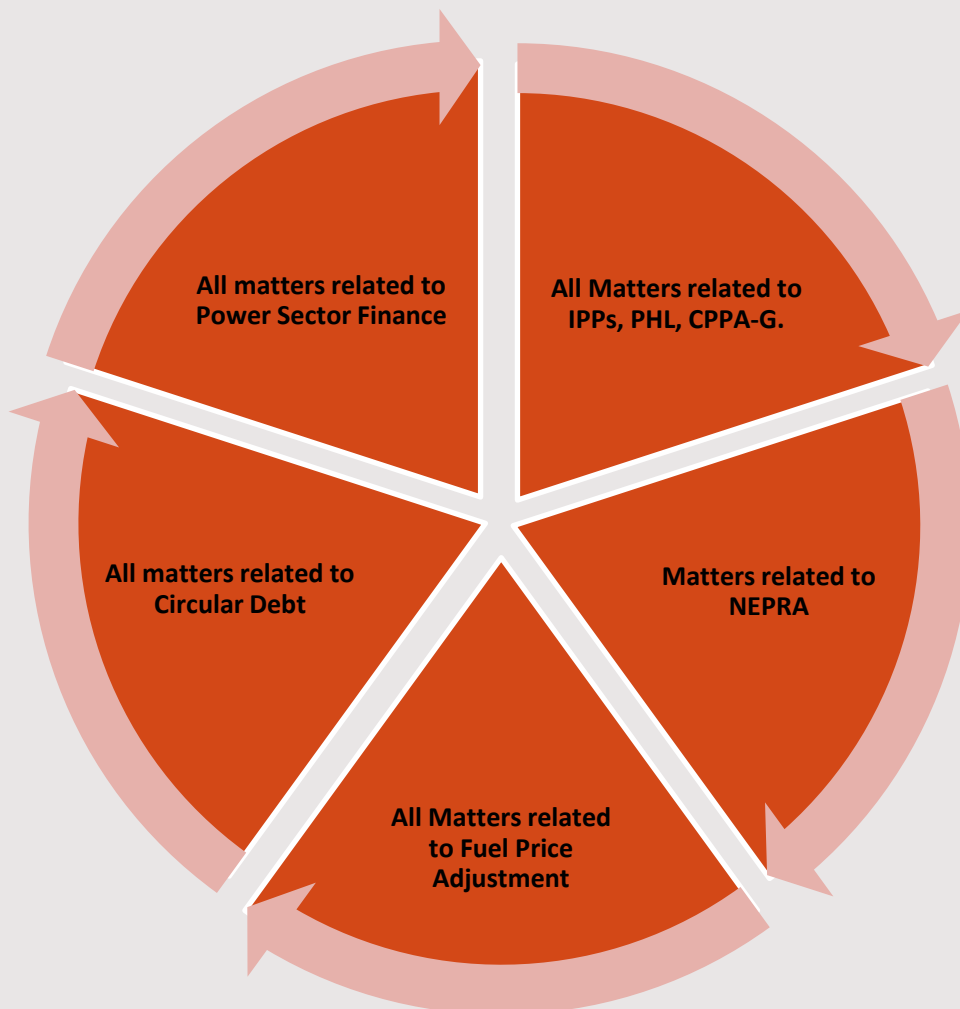


**2. POWER FINANCE WING (PF WING)**

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

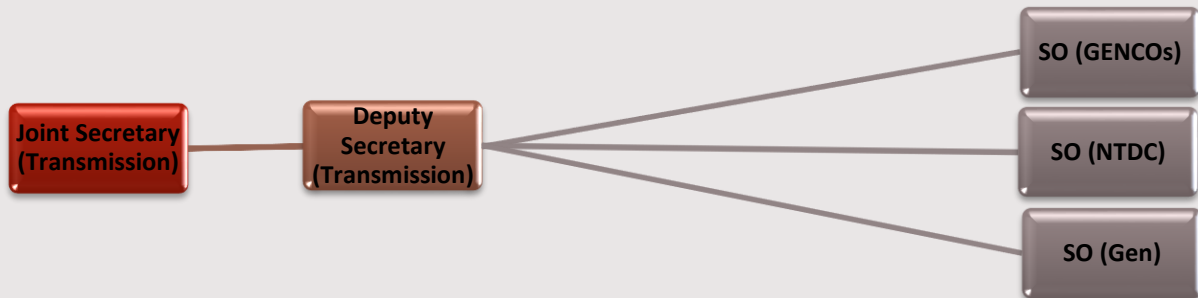


**Functions of Power Finance Wing**



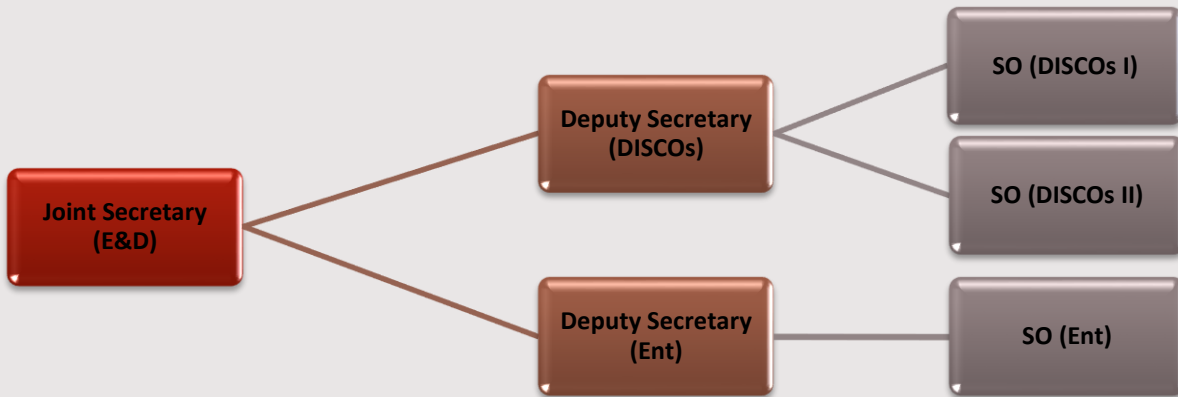
**3. TRANSMISSION WING (T WING)**

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



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

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

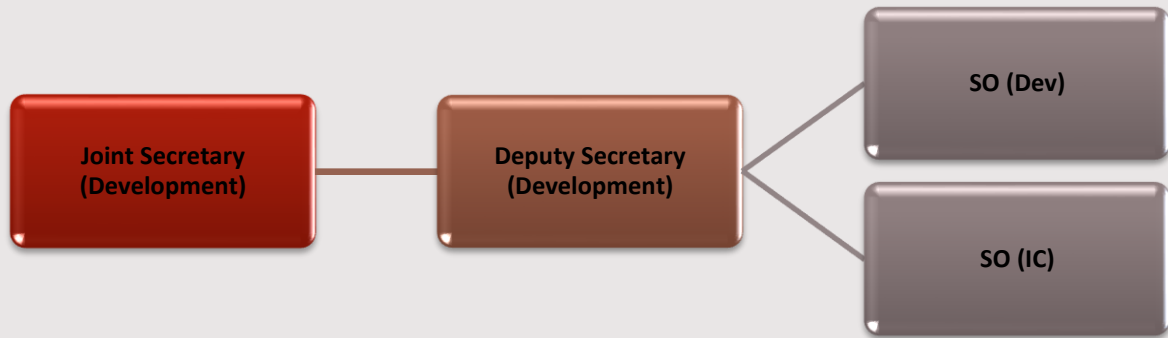


**Functions of Entities and DISCOs Wing**

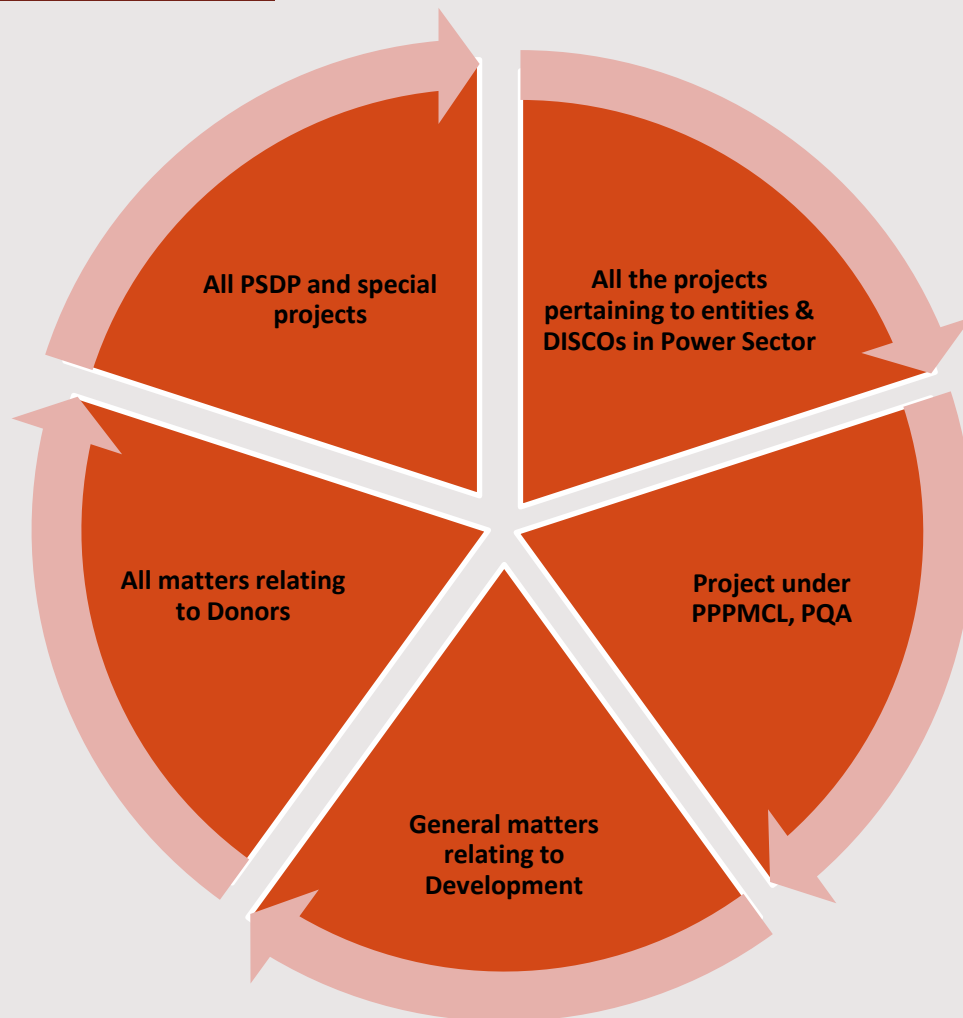


**5. DEVELOPMENT WING (DEV WING)**

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



**Functions of Development Wing**

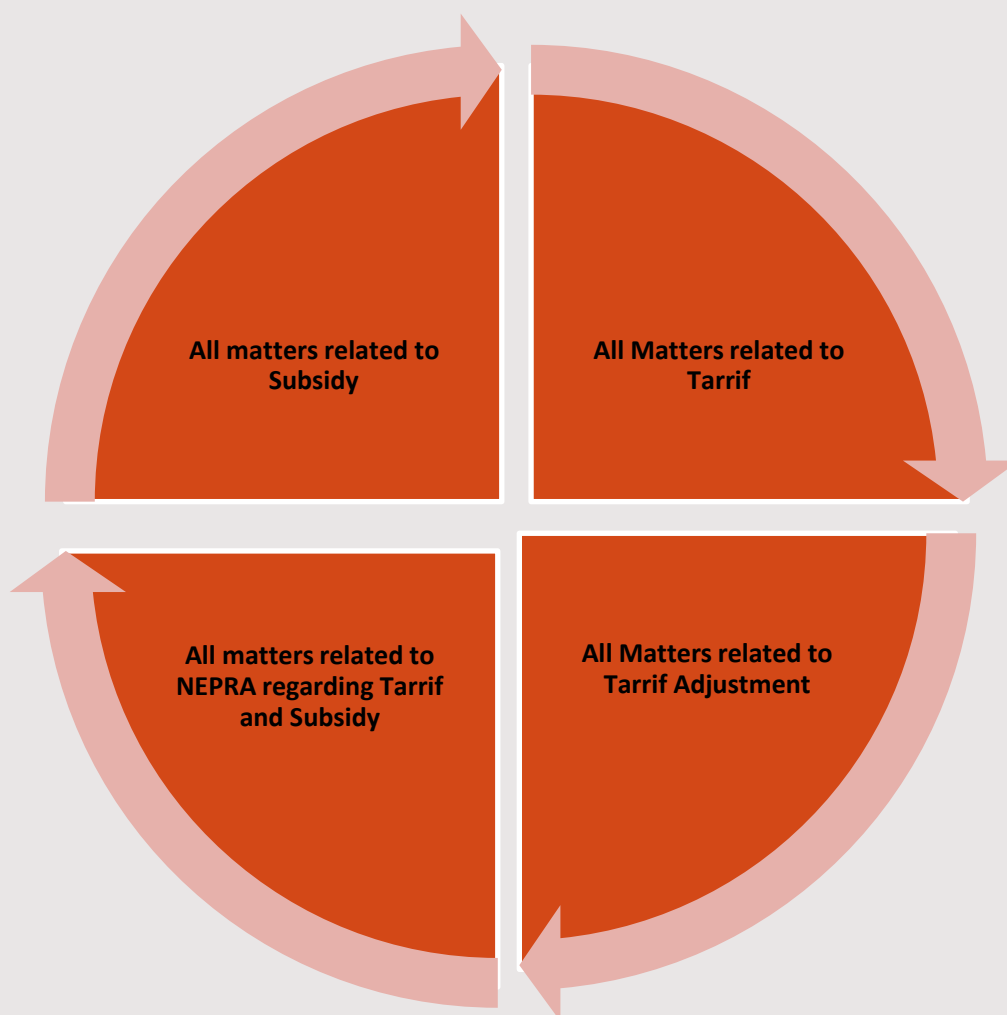


**6. TARIFF & SUBSIDY WING (T & S WING)**

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



**Functions of Tariff and Subsidy Wing**



## PERFORMANCE OF POWER DIVISION

### SUMMARY

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. The major emphasis of these steps is to make the electricity in the country affordable and available for all.

As per directions of the Prime Minister of Pakistan, a campaign to curb the menace of electricity theft has been launched since October, 2018 in all the distribution companies (DISCOs) of Pakistan with the main slogan of zero tolerance for over billing and zero tolerance for corruption. As per latest data, a total of 20,846 FIRs have been registered during FY 2022-23 while 366 persons involved in theft were arrested. An amount to the tune of Rs. 1,503 million was recovered from the anti-theft campaign. Recovery is a cumbersome process. However, Power Division has assigned a target to DISCOs to recover the current bills and arrears as well.

DISCOs have collected an amount of Rs. 2,906,539 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 1,468,865 new connections were installed during FY 2022-23.

Installation of the Advanced Metering Infrastructure (AMI) meters in DISCOs. 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 pre-empt illegal connections through direct hooking thereby controlling the menace of kundas and reducing line losses in high losses areas. PESCO and SEPCO have already started installation of these cables. 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 transformer against overloads and short circuits.

The ARE Policy, 2020 was approved by CCI in August, 2020. Accordingly it has been envisioned that by the year 2025 the share of renewable energy in the overall energy mix will be increased from the existing 4% while by the year 2030 it will be increased to 30%. Thirty six (36) wind power projects of 1,835 MW, Seven (07) solar projects of 530 MW, Eight (08) sugar mill based bagasse co-generation projects of 259.1 MW capacity were operational for providing electricity to grid during FY 2022-23. Apart from large scale solar PV projects, the Government of Pakistan also encouraged utilization of solar energy technology at consumer end across domestic, commercial, industrial sectors. As of 30<sup>th</sup> June, 2023, the number of Net-Metering based solar installations had reached up to 63,703 with a cumulative capacity of 1,055.03 MW. From 1<sup>st</sup> July 2022 to 30<sup>th</sup> June, 2023, the addition in number of Net-Metering based solar installations is 33,472 with capacity addition of 546.93 MW. As of 30<sup>th</sup> June, 2023, the number of certified installers has reached up to 327 with 175 new installers enlisted between 1<sup>st</sup> July 2022 to 30<sup>th</sup> June 2023. 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.

Power Division has successfully facilitated the commissioning of forty-six (46) independent power projects (IPPs) having gross capacity of 22,174 MW and materialized investment of more than US\$ 27 billion. These projects are based on various fuels and technologies which include hydro, Thar coal, imported coal, RLNG/gas and oil.

In order to resolve consumer's grievances on the spot, DISCOs regularly conduct open Katcheries at Sub-Divisional level. Issues relating to overbilling, non-issuance of demand notice/installation of meter, failure of



supply, low voltage, due date extension, transformer overloading and others are mainly resolved in these Open Katcheries. A total of 62,6,961 complaints from Prime Minister Delivery Unit were received by Power Division out of which 62,5,155 complaints have been resolved while the remaining are in progress. Total 10,012 villages were electrified during the FY 2022-23. Safety of workers, being of utmost importance, the DISCOs and NTDC are following all safety procedures during their work operations. These measures have greatly reduced fatal accidents at the operational level.

Power Division has been actively engaged with different working groups of various friendly countries specially China, Saudi Arabia, Bahrain, Iran, Central Asian Republics and other countries for exploring avenues of investment in the Power Sector in Pakistan.

**a. Decisions of Cabinet:**

Detail of Cabinet Decisions disposed and processed during FY 2022-23 are given below:

| Sr / No | Decisions                             | No of Decisions implemented |
|---------|---------------------------------------|-----------------------------|
| 1       | Cabinet Decision                      | 47                          |
| 2       | Economic Coordination Committee (ECC) | 29                          |
| TOTAL   |                                       | 76                          |

**b. Court Cases:**

Detail of Court Cases disposed and processed during FY 2022-23 are given below:

| Sr / No | Court / Departments   | No of Cases Disposed / Processed |
|---------|---|----------------------------------|
| 1       | Islamabad High Court  | 60                               |
| 2       | Lahore High Court   | 500                              |
| 3       | Sindh High Court  | 205                              |
| 4       | Peshawar High Court   | 220                              |
| 5       | Balochistan High Court  | 25                               |
| 6       | Other Courts / Tribunals  | 15                               |
| 7       | Pakistan Information Commission (PIC) Islamabad                           | 17                               |
| 8       | Ministry of Law and Justice Division for nomination of Advocates on Panel | 400                              |
| 9       | Wafaqi Mohtasib, Islamabad  | 01                               |
| TOTAL   |   | 1443                             |

**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 | 50     | 24                |
| 2       | Questions / Answers         | 130    | 246               |
| 3       | Motions                     | 15     | 25                |
| 4       | Resolutions                 | 03     | 07                |
| 5       | Calling Attention Notice    | 11     | 17                |
| 6       | Budget Cut Motions          | -      | 145               |
| 7       | Bills                       | 02     | 02                |

**d. Administrative/HR Matters:**

| Sr. | Detail Of Cases   | No. of Cases |
|-----|---|--------------|
| 1.  | Employees Deputed for Seasonal Hajj Duty  | 04           |
| 2.  | Contractual Employees regularized under (P.M Package)                                       | 04           |
| 3.  | Cases of Encashment/ Retirement of Officers Processed                                       | 02           |
| 4.  | Assistants (BPS-15/16) promoted as Superintendent (BPS-16)                                  | 02           |
| 5.  | Higher time scale (One step/ two-step) as one time dispensation to employees in BS 01 to 15 | 75           |
| 6.  | Upgradation of post of UDC,LDC  | 21           |
| 7.  | One additional increment as one time dispensation   | 08           |

**e. Miscellaneous Activities:**

| Sr. | Detail Of Cases                         | No. of Cases |
|-----|---|--------------|
| 1.  | Medical Claims Reimbursed               | 75           |
| 2.  | HBA Granted to Officials/ Officers      | 03           |
| 3.  | Motor Car Advance granted to Employees  | 04           |
| 4.  | Motorcycle Advance granted to Employees | 02           |

|     |  |     |
|-----|--|-----|
| 5.  | Officers of Department under Power Division for Training / Course for STI & PPMI etc. (Local Training) | 213 |
| 6.  | Officers of Department under Power Division nominated for E-Learning/ Training                         | 73  |
| 7.  | Officers of Department under Power Division nominated for Foreign Training/ Visit                      | 75  |
| 8.  | NESPAK Officers visit abroad NOC Cases   | 27  |
| 9.  | Hiring Sanctions issued in respect of Employees  | 148 |
| 10. | Security Pass/ Arm License Pass  | 27  |
| 11. | Maintenance of Service Book & PERs/ACRs  | 177 |
| 12. | Defence Planning Matter  | 04  |
| 13. | Transfer Grant/ Encashment / Farewell Grant/ GP Fund Grant   | 27  |

**f. Pension Cases:**

| Sr. | Detail Of Cases      | No. of Cases |
|-----|----------------------|--------------|
| 1.  | Pension Cases        | 03           |
| 2.  | Family Pension Cases | 02           |

**g. Public Sector Development Program 2022-23:**

During the Financial Year 2022-23 the total Public Sector Development Budget (PSDP) of Power Division was as under:

(Billion.Rs)

| Sr. No | Company Name   | No of projects | Estimated Cost |             | PSDP budget FY 2022-2023 |         |       |       |
|--------|----------------|----------------|----------------|-------------|--------------------------|---------|-------|-------|
|        |                |                | Total          | Foreign Aid | Local                    | Foreign | GoP   | Total |
| 1      | Power Division | 96             | 995.38         | 644.23      | 39.97                    | 20.77   | 22.36 | 83.10 |

**h. Federal Complaint Cell (Power Division):**

1. Federal Complaint Cell was established in June 2015 with a basic aim to address the Public complaints as the DISCOs response on the complaints was not satisfactory.

2. Federal Complaint Cell Ministry of Energy (Power Division) since 15 June 2015 is operational 24/7 at Ministry of Energy (Power Division). The complainants can approach Federal Complaint Cell through following modes:

- a. Online System.

## b. By Telephone.

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, **40,7,046** complaints have been lodged through online system out of which **40,6,847** have been resolved.

| <b>FCC Complaints</b><br><b>From 01 July 2022 to 30 June 2023</b> |              |               |                  |                |
|---|--------------|---------------|------------------|----------------|
| <b>Sr. No.</b>  | <b>DISCO</b> | <b>Total</b>  | <b>Redressed</b> | <b>Pending</b> |
| 1   | LESCO        | 5,614         | 5,568            | 46             |
| 2   | GEPCO        | 2,900         | 2,897            | 3              |
| 3   | FESCO        | 4,748         | 4,748            | 0              |
| 4   | IESCO        | 5,669         | 5,662            | 7              |
| 5   | MEPCO        | 46,945        | 46,841           | 104            |
| 6   | PESCO        | 1,409         | 1,405            | 4              |
| 7   | HESCO        | 2,688         | 2,590            | 98             |
| 8   | SEPCO        | 1,540         | 1,537            | 3              |
| 9   | QESCO        | 461           | 459              | 2              |
| 10  | TESCO        | 1             | 1                | 0              |
| <b>Total</b>  |              | <b>71,975</b> | <b>71,708</b>    | <b>267</b>     |

### Customer Complaint Management System (CCMS).

As per directions of Ministry of Energy (Power Division) to facilitate valuable customers, Customer Complaint Management System based on world's best practices and latest Information and Communication Technology (ICT) solution has been implemented since 01 May 2018.

All the Divisions, Sub divisions, Customer Service centers and other complaint centers of DISCOs are connected through this system via Web Portal and Mobile calls/SMS. CCMS is a centralized point of contact through different sources (Call, mobile-App, SMS, email and web portal etc.) by introducing a prompt reply/action in order to provide excellent customer support. Since 01<sup>st</sup> May 2018, **7,270,277** complaints have been lodged through online system out of which **7,252,125** have been resolved.

| S.No         | DISCOs | CCM Complaints<br>From 01 July 2022 to 30 June 2023 |                     |                    |
|--------------|--------|---|---------------------|--------------------|
|              |        | Total Complaints                                    | Resolved Complaints | Pending Complaints |
| 1.           | LESCO  | 8,72,497  | 8,72,219            | 278                |
| 2.           | GEPCO  | 3,15,532  | 3,15,375            | 157                |
| 3.           | FESCO  | 3,16,166  | 3,16,153            | 13                 |
| 4.           | IESCO  | 3,16,682  | 3,16,516            | 166                |
| 5.           | MEPCO  | 6,19,767  | 6,19,417            | 350                |
| 6.           | PESCO  | 35,525  | 35,482              | 43                 |
| 7.           | HESCO  | 77,380  | 77,324              | 56                 |
| 8.           | SEPCO  | 13,872  | 13,864              | 8                  |
| 9.           | QESCO  | 12,448  | 12,442              | 6                  |
| 10.          | TESCO  | 5   | 5                   | 0                  |
| <b>Total</b> |        | <b>2,579,874</b>                                    | <b>2,578,797</b>    | <b>1,077</b>       |

### 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, **7237** complaints have been lodged and out of which **7052** have been resolved

| Written Complaints Status<br>From 01 July 2022 to 30 June 2023 |       |       |           |         |
|--|-------|-------|-----------|---------|
| Sr. No.  | DISCO | Total | Redressed | Pending |
| 1  | LESCO | 89    | 82        | 7       |
| 2  | GEPCO | 63    | 58        | 5       |
| 3  | FESCO | 68    | 65        | 3       |

|              |       |            |            |           |
|--------------|-------|------------|------------|-----------|
| 4            | IESCO | 136        | 119        | 17        |
| 5            | MEPCO | 201        | 191        | 10        |
| 6            | PESCO | 69         | 57         | 12        |
| 7            | HESCO | 75         | 64         | 11        |
| 8            | SEPCO | 67         | 62         | 5         |
| 9            | QESCO | 6          | 4          | 2         |
| 10           | TESCO | 0          | 0          | 0         |
| <b>Total</b> |       | <b>774</b> | <b>702</b> | <b>72</b> |

### 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 6,26,961 complaints related to Power Sector have registered and out of which 6,25,155 have been resolved.

The Present statistics of PMDU are as under:-

| Sr. No. | Officer               | Total Complaints | New | In-progress | Resolved |
|---------|-----------------------|------------------|-----|-------------|----------|
| 1       | Chairman,(PPMC)       | 4,637            | 41  | 4           | 4,592    |
| 2       | MD, (PPMC)            | 1,104            | 3   | 3           | 1,098    |
| 3       | CEO GENCO             | 776              | 3   | 1           | 772      |
| 4       | CEO CPPA              | 72               | 0   | 1           | 71       |
| 5       | MD PPIB               | 72               | 0   | 0           | 72       |
| 6       | CEO( AEDB)            | 212              | 0   | 0           | 212      |
| 7       | MD NTDC               | 2,252            | 17  | 40          | 2,195    |
| 8       | MD Nespak             | 510              | 0   | 3           | 507      |
| 9       | CEO (PITC)            | 195              | 5   | 1           | 189      |
| 10      | CEO (NPPMCL)          | 10               | 1   | 0           | 9        |
| 11      | GM NPCC               | 5                | 0   | 0           | 5        |
| 12      | JS-(PF)               | 58               | 9   | 0           | 49       |
| 13      | JS -(Admin)           | 37               | 3   | 0           | 34       |
| 14      | JS (Transmission)     | 2                | 2   | 0           | 0        |
| 15      | JS (DISCO & Entities) | 65               | 4   | 0           | 61       |
| 16      | CEO, IESCO            | 85,703           | 121 | 6           | 85,576   |
| 17      | CEO, QESCO            | 8,146            | 0   | 31          | 8,115    |
| 18      | CEO, PESCO            | 80,950           | 388 | 35          | 80,527   |
| 19      | CEO, HESCO            | 54,793           | 6   | 183         | 54,604   |

|              |            |                 |              |            |                 |
|--------------|------------|-----------------|--------------|------------|-----------------|
| 20           | CEO, GEPCO | 46,378          | 122          | 3          | 46,253          |
| 21           | CEO, SEPCO | 35,784          | 83           | 10         | 35,691          |
| 22           | CEO, LESCO | 1,11,203        | 402          | 11         | 1,10,790        |
| 23           | CEO, MEPCO | 1,15,905        | 144          | 8          | 1,15,753        |
| 24           | CEO, FESCO | 76,244          | 97           | 3          | 76,144          |
| 25           | CEO, TESCO | 1,848           | 0            | 12         | 1,836           |
| <b>TOTAL</b> |            | <b>6,26,961</b> | <b>1,451</b> | <b>355</b> | <b>6,25,155</b> |

### ATTACHED ORGANIZATIONS / ENTITIES

Power Division has 23 Organizations and Entities under the control. Brief description of each Organization / Entity is as under:

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



## **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. There are 10 Distribution Companies as given below:

### **1. Peshawar Electric Supply Company (PESCO)**

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

### **2. Islamabad Electric Supply Company (IESCO)**

Islamabad Electric Supply Company (IESCO) is public sector company which was incorporated in 1998 after unbundling of Water and Power Development Authority (WAPDA). It is headquartered in Islamabad and provides service of electricity distribution to over 3.2 million consumers in the area from Attock to Jhelum, and from the river Indus to River Neelum in Kashmir covering 06 circles. IESCO is the sixth largest distribution company in terms of consumers. IESCO's distribution system works via 132 & 66KV sub-transmission lines, sub-stations, and 11KV & 440V low tension lines with distribution transformers that deliver electricity. IESCO has 108 Grid Stations having total capacity of 5,224 MVA and distributes the power through 951 Feeders. Advanced Metering Infrastructure (AMI) is a proven technology in utilities worldwide to improve technical and financial viability in distribution system, enhance system capabilities & improve customer satisfaction. Advanced Metering Infrastructure (AMI) System comprising of about 9,00,000 meters is under installation in different areas of IESCO.

### **3. Gujranwala Electric Power Company (GEPCO)**

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

#### **4. Lahore Electric Power 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 has 82 Grid Stations and distributes the power through 879 Feeders. LESCO distribution system works via 132 & 66KV sub-transmission lines, sub-stations, and 11KV & 440V low tension lines with distribution transformers that deliver electricity.

#### **5. Faisalabad Electric Power 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. FESCO distribution system works via 132 & 66KV sub-transmission lines, sub-stations, and 11KV & 440V low tension lines with distribution transformers that deliver electricity.

#### **6. Multan Electric Power Company (MEPCO)**

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

#### **7. 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.

### 8. Hyderabad Electric Power 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.

### 9. Quetta Electric Power 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.

### 10. Tribal Area Electric Power 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.

The key achievements of PPMC/DISCOs in the important parameters during FY 2022-23 are as under:

#### T & D Losses

| T&D Losses             |                     |             |                        |                     |             |           |
|------------------------|---------------------|-------------|------------------------|---------------------|-------------|-----------|
| Jul-Jun 2023           |                     |             | Jul-Jun 2022           |                     |             | Inc./Dec. |
| Units Purchased (MkWh) | Units Billed (MkWh) | %age Losses | Units Purchased (MkWh) | Units Billed (MkWh) | %age Losses |           |
| 116,507                | 97,338              | 16.45       | 129,725                | 107,866             | 16.85       | -0.40     |

**Recovery %age against Computed Billing (All Consumers)**

| Computed Recovery without subsidy (All Consumers) | Recovery %age against Computed Billing (Without Subsidy) |            |               |                   |            |               |                               |            |      |
|---|--|------------|---------------|-------------------|------------|---------------|-------------------------------|------------|------|
|   | Jul-Jun 2023   |            |               | Jul-Jun 2022      |            |               | Inc./Dec. w.r.t previous year |            |      |
|   | Billing  | Collection | %age Recovery | Billing           | Collection | %age Recovery | Billing                       | Collection | %age |
|   | (Rs. In Millions)  |            |               | (Rs. In Millions) |            |               |                               |            |      |
|   | 3,090,546  | 2,906,539  | 94.05         | 2,302,307         | 2,160,519  | 93.84         | 788,239                       | 746,020    | 0.20 |

**AT&C losses (All consumers)**

| AT&C Losses (Computed recovery without subsidy of All Consumers) | AT& C Losses (%age) |              |           |
|--|---------------------|--------------|-----------|
|  | Jul-Jun 2023        | Jul-Jun 2022 | Inc./Dec. |
|  | 21.43               | 21.97        | -0.54     |

**Anti-theft drive (01.07.2022 to 30.06.2023)**

| 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           | 11,110                    | 76                         | 45.02                      | 771.92  | 580.02  | 75.14                                |
| GEPCO           | 1,386                     | 0                          | 7.33                       | 180.17  | 115.17  | 63.92                                |
| FESCO           | 3,530                     | 4                          | 9.86                       | 260.68  | 163.18  | 62.60                                |
| IESCO           | 120                       | 0                          | 9.00                       | 231.98  | 188.84  | 81.40                                |
| MEPCO           | 4,700                     | 286                        | 24.52                      | 570.79  | 455.04  | 79.72                                |
| PESCO           | 0                         | 0                          | 0.13                       | 4.04  | 1.13  | 28.03                                |
| HESCO           | 0                         | 0                          | 0.00                       | 0.00  | 0.00  | 0.00                                 |
| SEPCO           | 0                         | 0                          | 0.00                       | 0.00  | 0.00  | 0.00                                 |
| QESCO           | 0                         | 0                          | 0.00                       | 0.00  | 0.00  | 0.00                                 |
| <b>Total</b>    | 20,846                    | 366                        | 95.87                      | 2,019.58  | 1,503.37  | 74.44                                |

**New Connections Installed during 2022-23**

Nos. 1,468,865

**Number of defective meters replaced during 2022-23**

Single Phase: Nos. 2,102,348

3-Phase: Nos. 203,190

**Number of transformers installed during 2022-23**

Nos. 24,001

MVA 1,662

**HT & LT lines added during 2022-23**

HT (km) 5,127

LT (km) 1,525

**Number of Villages Electrified during 2022-23**

10,012

## **NATIONAL TRANSMISSION AND DESPATCH COMPANY (NTDC)**

After unbundling of WAPDA, NTDC was incorporated as a Public Limited Company on 06<sup>th</sup> 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:

### **a) 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.

### **b) System Operator**

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

### **c) Wire Business**

- Transmission Planning
- Design & Engineering
- Project Development and Execution
- Operation and Maintenance of Transmission Assets

### **d) 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 53.07 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 20,436 kms of 500 kV and 220 kV transmission lines network spread across the length and breadth of the country.

The region-wise break-up is given below:

| Region       | 500kV               |                         |                | 220kV               |                         |                |
|--------------|---------------------|-------------------------|----------------|---------------------|-------------------------|----------------|
|              | Grid Stations (Nos) | Transmission Lines (km) | Capacity (MVA) | Grid Stations (Nos) | Transmission Lines (km) | Capacity (MVA) |
| North        | 12                  | 5,150                   | 20,400         | 38                  | 8,070                   | 29,740         |
| South        | 7                   | 3,721                   | 5,550          | 12                  | 3,495                   | 7,470          |
| <b>Total</b> | <b>19</b>           | <b>8,871</b>            | <b>25,950</b>  | <b>50</b>           | <b>11,565</b>           | <b>37,210</b>  |

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 2022-23 is as below:

| Sr. No. | Project Description  | Completion Date | Voltage Level | MVA / km |
|---------|--|-----------------|---------------|----------|
| 1.      | Addition of transformer at 500 kV Sheikhpura Grid Station                      | 01.07.2022      | 500 kV        | 450 MVA  |
| 2.      | Addition of Transformers at 500 kV Nokhar Grid Station                         | 06.07.2022      | 500 kV        | 600 MVA  |
|         |  |                 | 220 kV        | 250 MVA  |
| 3.      | Addition and augmentation of transformers at 500 kV New Multan Grid Station    | 08.07.2022      | 500 kV        | 450 MVA  |
|         |  | 04.11.2022      | 220 kV        | 270 MVA  |
| 4.      | Construction of 220 kV Lalian Grid Station                                     | 28.11.2022      | 220 kV        | 500 MVA  |
| 5.      | Augmentation of transformers at 220 kV Vehari Grid Station                     | 01.01.2023      | 220 kV        | 180 MVA  |
| 6.      | Augmentation of transformers at 220 kV Shikarpur Grid Station                  | 04.02.2023      | 220 kV        | 180 MVA  |
| 7.      | Augmentation of transformers at 220 kV Quetta Industrial Grid Station (01 No.) | 10.02.2023      | 220 kV        | 90 MVA   |
| 8.      | 500kV Faisalabad West Grid Station   | 08.03.2023      | 500 kV        | 1500 MVA |
|         |  |                 | 220 kV        | 750 MVA  |
| 9.      | 500kV SECL – Matiari T/Line  | 10.05.2023      | 500 kV        | 220 km   |
| 10.     | Augmentation of transformer at 220 kV Bannu Grid Station                       | 18.05.2023      | 220kV         | 90 MVA   |

A summary of addition in transmission system since 2022 is given below for reference:

| <b>Addition in Transmission System in Last Year</b> |                        |                           |  |
|---|------------------------|---------------------------|--|
| <b>Category</b>                                     | <b>Grid Stations</b>   | <b>Transmission Lines</b> | <b>Capacity (through addition of G/S, Augmentation/Ext. Works)</b> |
|   | <b>Nos.</b>            | <b>Km</b>                 | <b>MVA</b>   |
| 500 kV  | 01 (FSD West G/S)      | 149.6                     | 1500   |
|   | Addition/ Augmentation | -                         | 1500   |
| 220 kV  | 01 (Lalian G/S)        | 04                        | 500  |
|   | Addition/ Augmentation | -                         | 1060   |

### **FUTURE EXPANSION OF TRANSMISSION SYSTEM:**

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

| <b>Future System (2025)</b> |                            |                                |                       |
|-----------------------------|----------------------------|--------------------------------|-----------------------|
| <b>Category</b>             | <b>Grid Stations (No.)</b> | <b>Transmission Lines (km)</b> | <b>Capacity (MVA)</b> |
| 500 kV                      | 22                         | 9,613                          | 30,900                |
| 220 kV                      | 58                         | 12,341                         | 46,180                |
| ±660 kV                     | 02 (Converter Stations)    | 1,772                          | 4,000                 |
| ±500 kV                     | 1 (Converter Station)      | 226                            | 1,000                 |
| <b>Total</b>                | <b>83</b>                  | <b>23,952</b>                  | <b>82,080</b>         |

### **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;
- 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).
- 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.

### **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 (05 number projects) for Summer 2023, while efforts are being made to expand the system in order to overcome the Constraints intended for removal in future (beyond 2023).

### **CAPITALIZATION:**

Details of Capitalization for the last 04 years are given as hereunder for reference:

| <b>Financial Year</b> | <b>Rupees in Billions</b>  |
|-----------------------|----------------------------|
| 2019-20               | 39.43 Billion              |
| 2020-21               | 40.72 Billion              |
| 2021-22               | 37.83 Billion              |
| 2022-23               | 53.07 Billion (un-audited) |

### **PROFIT AFTER TAX:**

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

| <b>Financial Year</b> | <b>Profit After Tax</b>    |
|-----------------------|----------------------------|
| 2019-20               | 09.25 Billion              |
| 2020-21               | 12.74 Billion              |
| 2021-22               | 16.56 Billion              |
| 2021-23               | 12.30 Billion (un-Audited) |

### **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 maintained NTDC entity rating at AA+ for long term and A+ 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, two international arbitrations were held in which one decided in favour of the company and one against the company for the past 03 years NTDC has secured a success rate ranging from 75% to 85 % in litigation/ court cases etc.

**PREPARATION & SUBMISSION OF TRANSMISSION SYSTEM EXPANSION PLAN (TSEP) AND REVISION OF GRID CODE:**

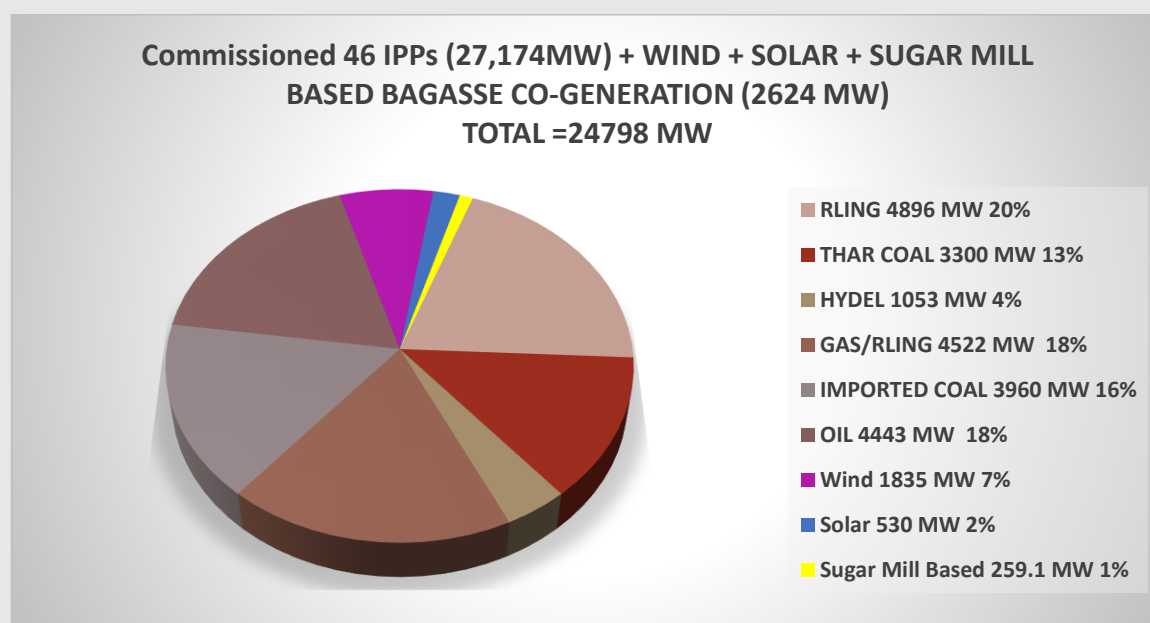
For the first time in the history of Pakistan, NTDC has prepared & submitted the Indicative Generation Capacity Expansion Plan (IGCEP) 2022-31 which NEPRA has approved on 01.02.2023. As per Grid Code 2023, next iteration of IGCEP 2024-34 will be prepared by System Operator on 31.12.2023. (PSP) NTDC will prepare the Transmission System Expansion Plan (TSEP) on 31.03.2024 accordingly and submit to System Operator. After review, (SO) NPCC will submit both IGCEP and TSEP to NEPRA on 30.04.2024.

In order to incorporate the changes in the market in wake of CTBCM, NTDC revised Grid Code and submitted to NEPRA, which NEPRA has approved on 21.03.2023.

### Private Power and Infrastructure Board (PPIB)

Private Power and Infrastructure Board (PPIB) being an autonomous body of the Power Division, Government of Pakistan (GoP) provides one-window facility to investors in the field of power generation and related infrastructure. PPIB approves and facilitates the development and implementation of private and specified public sector power generation and transmission lines projects.

The organization has so far, successfully facilitated the commissioning of forty-six (46) independent power projects (IPPs) having gross capacity of 22,174 MW and materialized investment of more than US\$ 27 billion. These projects are based on various fuels and technologies which include hydro, Thar coal, imported coal, RLNG/gas and oil. 36 Wind, 7 Solar and 8 Sugar Mill based bagasse co-generation projects having capacity of 2624 MW were operational during FY 2022-23. It is noteworthy to underline that currently, more than 50% of total power generation of country is being provided by the private sector. PPIB also has the distinction of facilitating country's mega transmission line project (Lahore-Matiari) in the country, which apart from being the first HVDC Transmission line project of the country, happens to be the maiden project developed by private sector in Pakistan. Completed with foreign direct investment of US\$ 1.65 billion, HVDC Project is a practical manifestation of PPIB's vital role in private sector resource mobilization for transmission infrastructure projects.



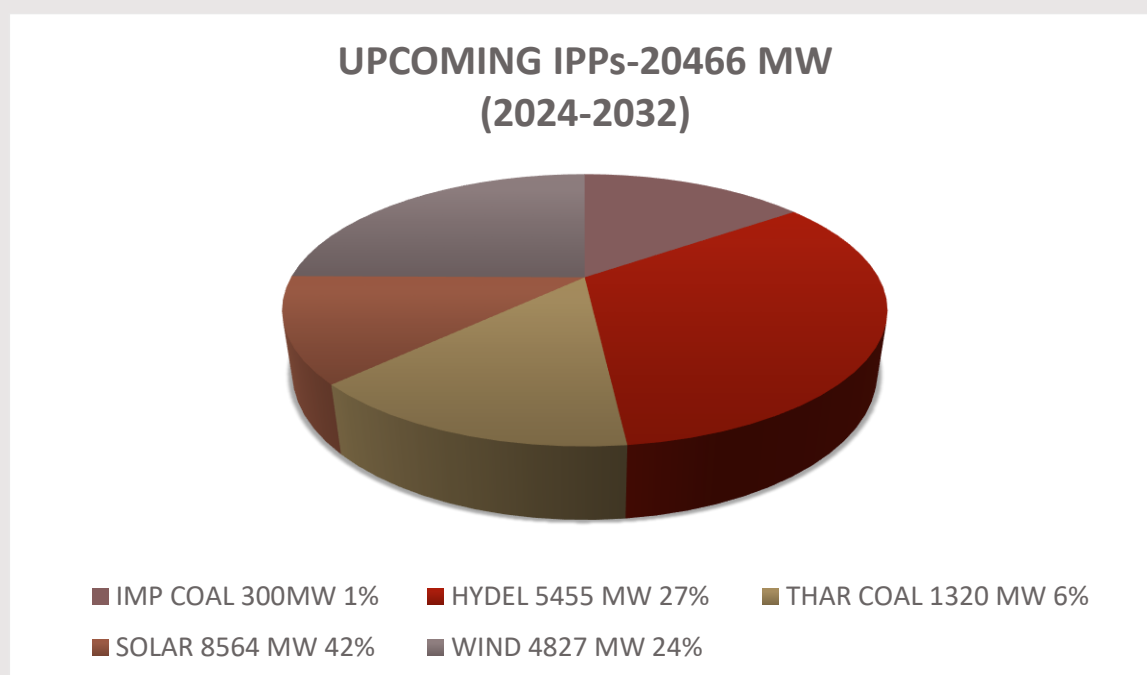
### Current Portfolio of Projects:

For meeting long term power requirements, GoP is focusing on least cost generation options and use of domestic resources, particularly hydro potential in the north, renewable Wind and Solar in south and local coal mostly available in Thar area. Creating an ideal balance amongst various choices which is affordable within a sustainable socio-economic framework for the country would form a solid base towards attaining long-term sustainability and reliability in the sector. In order to ensure addition of adequate generation at a least-cost basis to meet future energy demands, comprehensive planning is also being conducted in Pakistan in the form of the IGCEP, which includes expansion planning studies which is updated annually in order to retain accuracy in the wake of changing dynamics. PPIB is committed to implement the reform agenda of the GoP for developing power sector into an efficient and profitable sector, thus sincere efforts are being made for achieving it.

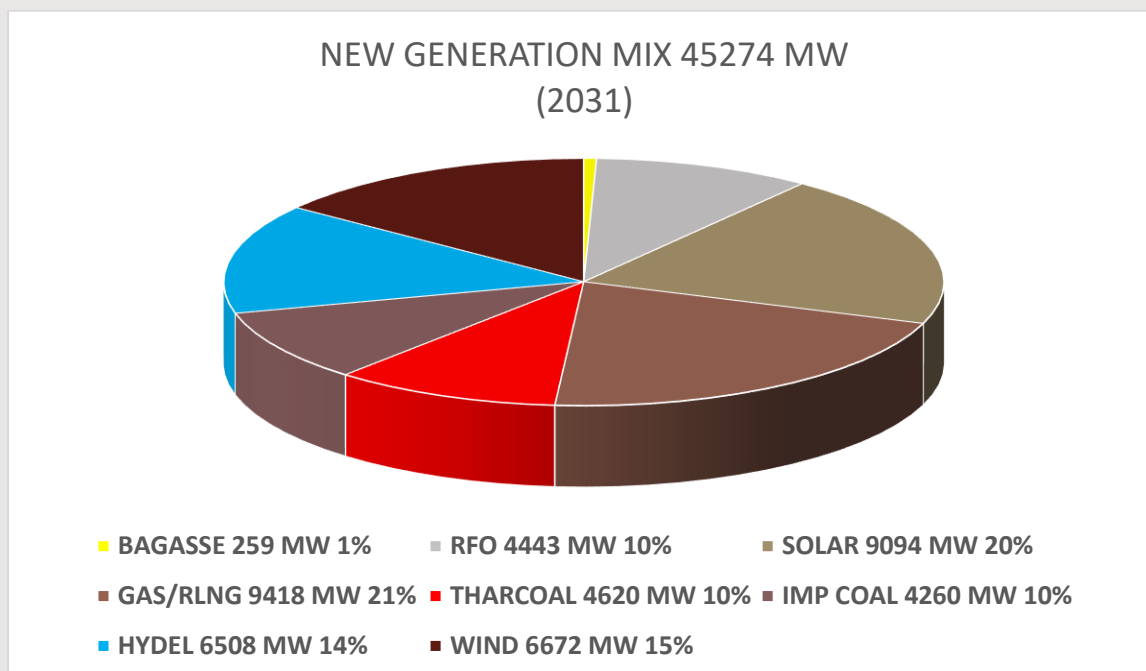
Currently, PPIB is processing a portfolio of fifteen (15) hydro and coal based IPPs having cumulative capacity of 7,075 MW (Annex-I, page 63). The mentioned portfolio mainly comprises of indigenous Thar coal and Hydel resources that constitutes 96% of the total portfolio which demonstrates PPIB's commitment for enriching national grid with clean, green and sustainable electricity.

### CPEC Projects:

PPIB is a leading institution of the GoP in facilitating the implementation of game changer CPEC initiative under which it is handling portfolio of thirteen power generation projects including renewable energy projects of which PPIB has so far successfully implemented 63% program while remaining 37% is under active processing.



PPIB believes that further adoption of affordable & accessible indigenous & renewable energy based on coal and hydel can make a greater contribution towards meeting Pakistan's growing electricity demands. Thus, being a frontline entity of the GoP, PPIB is working on war footings for development of power sector on solid, reliable and sustainable footings. Moving forward, PPIB has stopped processing imported based power generation projects since 2016 and only focusing on indigenous Thar coal, and Renewable, hydro based power generation projects for meeting future requirements. As a result, Power Sector has started witnessing incremental growth in the field of power generation based on Hydro and Thar Coal and Renewable Energy which is a healthy indicator towards attaining sustainability in the system. Since, with the combined share of 96%, indigenous Thar coal, Hydel and Renewable Energy are highly dominating fuels/technologies in PPIB's current portfolio, thus, would play key role in reducing dependence on imported fuels drastically. With the efforts of PPIB, country's energy-mix for the year 2031 would be depicting as follows:



Over the recent years, private investments in generation side, particularly in indigenous Thar coal and hydropower have played decisive role in expansion and diversification of country's power sector. At present, PPIB is implementing two robust policy frameworks having market competitive incentives and simplified procedures for the investors. The "Power Generation Policy 2015" and the "Policy Framework for Private Sector Transmission Line Projects 2015" were launched to attract new investments for development of new power generation projects and augmentation of transmission network in the country. These policy frameworks have received overwhelming market response from many renowned local and international investors and lenders, as a result, so far attracted eleven (11) IPPs of more than 12,000 MW valuing 14 billion US\$ investment and a transmission line project of 1.65 billion US\$ investment.

There are various important bipartite and tripartite activities involved in processing of a power generation project such as tariff determination, land acquisition, generation license, environmental clearance, coal pricing, IA, PPA, WUA, CSA, TSA, FSA etc which are interdependent on each other and if this cycle of activities is disrupted by any single activity, it impacts on the overall chain, thus disturb the project timelines. Although PPIB achieved significant progress in advancing and implementing upcoming IPPs, however, some potential force majeure beyond the control of project companies/sponsors hampered the overall development pace of few projects, these factors include but not limited to COVID-19, Sinosure and land acquisition etc. In all such cases, PPIB as facilitator, played important role, and with the combined efforts and support of all concerned stakeholders, issues are being addressed, as a result, delayed projects are able to find headway towards accomplishment of critical milestones. Consequently, during 2022-23, four (4) projects of 3,243 MW cumulative power generation capacity have been completed which include three (3) Thar coal based projects of 1,980 MW and one RLNG fired power project of 1,263 MW. Detail of is as follows:

#### **Thar Energy Project:**

Thar Energy Limited Power Plant (TEL) a 330 MW mine-mouth lignite-fired power plant at Thar Coal Block II Sindh, developed under China-Pakistan Economic Corridor (CPEC) Framework become operational with effect from 1<sup>st</sup> October 2022 against the target date of September 2022.

**Shanghai Electric Project:**

Developed under the CPEC, the 1320 MW Thar coal-based Shanghai Electric power project located at Thar Block-I started commercial operations with effect from 5<sup>th</sup> February 2023 against the target date of December 2022.

**Thal Nova Project:**

PPIB announced achievement of the Commercial Operation Date (COD) of 330 MW ThalNova Power Thar Private Limited Company Project located at Thar Block-II on 17<sup>th</sup> February 2023 against the target date of December 2022. This project has also been developed under the CPEC.

**PTPL RLNG based Power Project:**

1,263 MW RLNG based Punjab Thermal Power (Pvt) Limited (PTPL) power plant located near Trimmu Barrage, District Jhang achieved COD on gas on 23<sup>rd</sup> June 2023. The Plant is using advanced technology/machines with efficiency of 61.6%, which is amongst the highest in the world

Additionally, following upcoming projects are being pursued by PPIB for swift advancement, as a result, have achieved considerable progress in development process:

**Suki Kinari Hydropower Project:**

884 MW Suki Kinari Project is located on River Kunhar, a tributary of river Jhelum, District Mansehra, Khyber Pakhtunkhwa. It is being developed under the CPEC framework with an investment outlay of US\$ 1800 Million. This is the first private sector hydro power project in Khyber Pakhtunkhwa province and so far the largest hydro IPP in Pakistan which has achieved financial close. The Project is well on track of development with more than 90% construction works completed by end June 2023. Efforts are being made to complete this project by November 2024.

**Kohala Hydropower Project:**

Being developed under the CPEC, the 1124 MW Kohala Hydro Power Project is the largest private investment in any IPP of the country. Located in the north-east region of the country, the project is planned to be built on river Jhelum that flows in AJ&K. For achievement of Financial Close by September 2024, efforts are being made by PPIB for early resolution of issues like Sinosure, land acquisition, conditional approval of PPA and non-approval of cost sewage treatment plants (STP).

**Azad Pattan Hydropower Project:**

700 MW Azad Pattan HPP on river Jhelum is located at dual boundary between AJ&K (District Sudhnoti) and Punjab (District Rawalpindi) and it is being processed by PPIB under the CPEC framework. Work on this project is in progress, owing to delays mainly on part of Sinosure, land acquisition, and conditional approval of PPA, the Board of PPIB allowed extension for achievement of Financial Close up to 31<sup>st</sup> December 2024.

**7.08 MW Riali and 8 MW Kathai Small Hydropower Projects:**

Both Riali and Kathai hydropower projects are located in AJ&K. 7.08 MW Riali-II Hydropower Project is located on Ghor Nullah district Muzaffarabad while 8 MW Kathai is located on Kathai Nullah, district Hattian. Both projects are under Financial Closing stage. The civil works of Riali-II hydropower project has been completed proactively by sponsors through its equity. Under PPIB's facilitation, these projects are advancing to achieve COD by December 2025.

**Short Term Targets:**

PPIB is committed to safeguard the national interest by producing indigenous power, thus advancing all those projects which are based on hydropower and indigenous Thar coal. It is also noteworthy that in order to reduce dependence on imported fuels, in 2016, the Government of Pakistan (GoP)/PPIB Board has already placed moratorium on further processing of new imported fuel based power generation projects except those projects which had already been approved by the Board at that time.

Under short term targets, apart from opening up new vistas of investment in Thar Coal and hydel power generation in accordance with the power demand-supply scenario, PPIB is endeavouring to complete another (04) IPPs of 1,199 MW during 2024 and 2025. Summary is as follows:

| Calendar Year      | Hydel MW      | Thar Coal (MW) | Imported Coal (MW) | RLNG (MW) | Total (MW)      |
|--------------------|---------------|----------------|--------------------|-----------|-----------------|
| 2024               | 884           | -              | -                  | -         | 884             |
| 2025               | 15.08         | -              | 300                | -         | 315.08          |
| <b>Grand Total</b> | <b>899.08</b> | -              | <b>300</b>         | -         | <b>1,199.08</b> |

**MERGER OF AEDB INTO PPIB:**

Inter-alia, other advantages, envisioning enhanced operational efficiency and facilitation of investors by extending a true one-window facility for smooth and seamless development and processing of power projects of all technologies including Alternative and Renewable Energy (ARE) projects by a one entity on behalf of GoP, the plan for merger of AEDB with PPIB was re-initiated in 2020-21 which is now at advance stages. In this regard, after due process, the Private Power and Infrastructure Board (Amendment) Bill, 2023 has already been cleared from National Assembly and Senate. As per available information, the mentioned Bill has also received assent of the President on 31<sup>st</sup> May 2023 while the Gazette Notification is awaited.

The merger to AEDB into PPIB would result in expansion of the mandate of PPIB, consequently, power generation projects based on all fuels/technologies (except nuclear) would be processed and facilitated exclusively by PPIB. Furthermore, according to IGCEP-2022-31, around 91% of the installed capacity addition in the country's power mix will be based on indigenous resources out of which approximately 82.6% will consist of RE technologies i.e. Hydel, Wind, Solar and Bagasse. In such scenario, the merger of AEDB into PPIB assumes further importance.

**ROLE OF INDEPENDENT AUCTION ADMINISTRATOR (IAA):**

In the perspective of fundamental shift in the entire power system model in the country to make it operationally and financially viable, GoP is in the process of implementing Competitive Trading Bilateral Contract Market (CTBCM) which basically aims at transition of existing market from single buyer model to a competitive wholesale power market. PPIB being one of the key departments of the GoP in the Power Sector would be playing a crucial role of Independent Auction Administrator (IAA) under the CTBCM Model in the near future.

PPIB is actively working on various pre-requisites / actions before assuming the role of IAA which include merger of AEDB with PPIB, strengthening of IAA (i.e. PPIB) and preparation of Security Package Documents (SPDs) with the help of World Bank Consultant. For registration as IAA, PPIB has already submitted

application to NEPRA, action on which is under process at NEPRA's end. Similarly, IAA Strengthening Plan which was prepared with the support of consultant has been approved by the PPIB Board under which hiring of skeleton staff initially for undertaking IAA role is being processed.

### **SUPPORT IN INDICATIVE GENERATION CAPACITY EXPANSION PLAN 2022-31:**

Having extended list of success stories on its credit, PPIB has earned a unique status among other stakeholders. Starting from implementing IPPs program in 1994, 2002 and 2015, efficient handling of gigantic CPEC energy chapter, delivery of hydro and Thar coal IPPs, long list of upcoming indigenous coal and hydro based projects, facilitating first ever private transmission line project and Small Hydropower Projects are some of the iconic highlights of PPIB's excellent track record. Moreover, having lead role in arranging power generating capacity, PPIB actively contributes and provides comprehensive inputs on processes, methodology, assumptions, basis used to workout demand projection, selection criteria and time lines of projects being evaluated for preparation of Indicative Generation Capacity Expansion Plan every year. During consultative process related to IGCEP, PPIB provides full support in the form of relevant data provision related to its future power projects.

### **NEW TRANSMISSION LINE PROJECTS:**

Considering that large number of transmission lines will have to be added in the national transmission system to accommodate new additions, PPIB is pursuing National Grid Operator (i.e. NTDC) to share a list of suitable transmission projects supported by relevant information/data/studies, as per provisions of the Transmission Line Policy 2015, based on which PPIB intends to initiate International Competitive Bidding(s) for award of these projects to private sector, in collaboration with other stakeholders.

Furthermore, PPIB has engaged USAID pursuant to the USAID Power Sector Improvement Activity (PSIA) Task Order pertaining to "Implementation Plan for Private Sector Participation in Pakistan Power Transmission" to provide support / assistance in preparation of standardized Security Package Documents (SPDs) for award of transmission projects to private sector through International Competitive Bidding (ICB) and review of the existing "Policy Framework for Private Sector Transmission Line Projects, 2015".

### **ENCOURAGING NEW HYDROPOWER PROJECTS:**

In order to promote hydel potential for power generation, agreement has been signed between the Government of Pakistan and the Agence Française De Développement (AFD), France. Under the agreement, AFD will provide financial support to PPIB for capacity building and for implementation of hydropower projects more efficiently. The agreed areas of support for technical assistance include preparation of mechanism for tariff based bidding for hydropower projects, hiring of consultant to assist Panel of Experts (POE) on review of Feasibility Studies for hydropower projects and capacity building of PPIB employees. The consultant has initiated its work on the above mentioned assignments/tasks.

### **CONVERSION OF IMPORTED COAL BASED PROJECTS TO INDIGENOUS THAR COA:**

Importing coal increases dependency on other countries and drains huge amount of foreign exchange reserves. Due to increased price of imported coal in international market and to utilize indigenous Thar coal, Government of Pakistan 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, which will not only decrease the fuel cost



component but also reduce burden on foreign exchange reserves. Subsequently, efforts are underway to start blending of Thar coal by Three imported coal-based IPPs with a cumulative capacity of 4,000 MW.

### **PUMP STORAGE HYDROPOWER:**

IGCEP 2022-31 has envisaged to induct Variable Renewable Energy-VRE (solar and wind plants) to the extent of 17250 MW. VRE inherits intermittency which impact negatively to power system stability. Pumped Storage Hydropower (PSH), while acting as grid scale battery, provides flexibility through system inertia, frequency control, voltage regulation, storage and reserve power with rapid mode changes, and black-start capability. Therefore, PSH is vital to support the ever-growing proportion of VRE in grid systems.

Considering vast experience and expertise of Chinese in implementation of PSH, PPIB in 7th meeting Energy Planning Expert Panel (EPEP) of CPEC Energy Project Cooperation proposed to conduct the Study for Identification and Ranking of Potential Sites for Pumped Storage Hydropower Projects. China side supported the proposal to conduct this study. This study will be started upon approval of the minutes of EPEP by Joint Energy Working Group (JEWG) of CPEC.

### **DEVELOPMENT OF HYDROPOWER PROJECTS INITIATED BY THE KHYBER PAKHTUNKHWA PROVINCE:**

For further development of certain private sector hydropower projects initiated by PEDO GoKP; PEDO requested PPIB to issue tri-partite letter of support to such projects under provisions of Power Generation Policy 2015. PPIB will undertake development of such projects through Tri-Partite Letter of Support (LOS) subject to availability of power purchaser consent and feasibility stage tariff determination of NEPRA.

### **ALTERNATIVE AND RENEWABLE ENERGY DEVELOPMENT IN COUNTRY:**

Ministry of Energy (Power Division) has been promoting and facilitating the development and deployment of alternative and renewable energy technologies in the country. The development of renewable energy-based power generation projects is being pursued on IPP mode through private sector investors. The status of RE power projects as of 30<sup>th</sup> June, 2023 is given below:

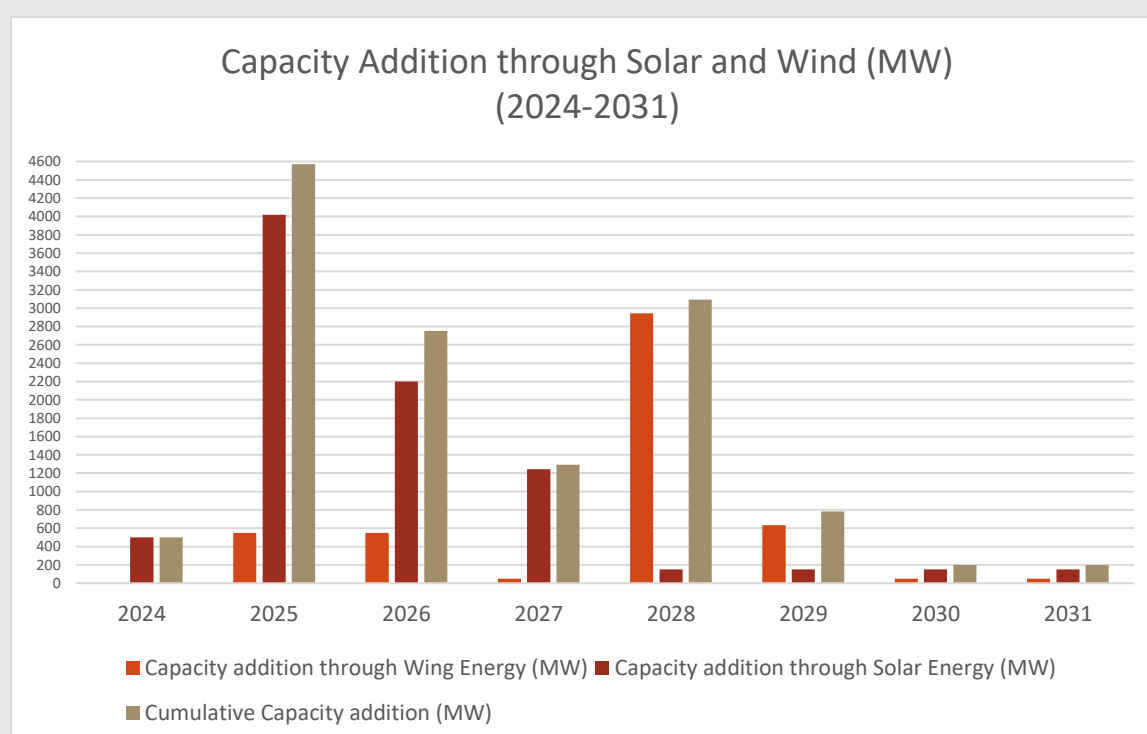
- Thirty six (36) wind power projects of 1,835 MW cumulative capacity were operational and providing electricity to the grid.
- Seven (07) solar projects of 530 MW cumulative capacity were operational.
- Eight (08) sugar mill based bagasse co-generation projects of 259.1 MW capacity were operational.

Several ARE projects, initiated under the RE Policy 2006, are in pipeline. These include three (03) solar projects of 150 MW cumulative capacity that are under construction and are expected to be completed by August, 2023. One (01) bagasse-based power project of 32 MW is also under development and is expected to be completed by December, 2023.

Due to concerted efforts, the share of AREs has already exceeded to 7% 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 regions of the country.

The IGCEP 2022, approved by the Regulator, provides the following capacity additions from wind and solar energy by 2031:

| Year                                | Capacity addition through Wind Energy (MW) | Capacity addition through Solar Energy (MW) | Cumulative Capacity Addition (MW) |
|-------------------------------------|--|---|-----------------------------------|
| 2024                                | -  | 500   | 500                               |
| 2025                                | 550  | 4020  | 4570                              |
| 2026                                | 550  | 2200  | 2750                              |
| 2027                                | 50   | 1244  | 1294                              |
| 2028                                | 2944                                       | 150   | 3094                              |
| 2029                                | 633  | 150   | 783                               |
| 2030                                | 50   | 150   | 200                               |
| 2031                                | 50   | 150   | 200                               |
| <b>Cumulative Capacity Addition</b> |  |   | <b>13,391 approx</b>              |



### **Net-Metering:**

Apart from large scale solar PV projects, the Government of Pakistan is also encouraging utilization of solar energy technology at consumer end across domestic, commercial, industrial sectors. PPIB has also been carrying out certification of service providers / installers of solar systems under PPIB (Certification) Regulations for the safe, secure and quality-assured supply of solar and wind energy generation projects, products and systems and installation and servicing thereof for small-scale industrial, agricultural, commercial and residential installations. As of 30<sup>th</sup> June, 2023, the number of net-metering based solar installations had reached up to 63,703 with a cumulative capacity of 1055.03 MW. From 1<sup>st</sup> July 2022 to 30<sup>th</sup> June, 2023, the addition in number of net-metering based solar installations is 33,472 with capacity addition of 546.93 MW. As of June 30, 2023, the number of PPIB certified installers has reached up to 327 with 175 new certificates issued between 1<sup>st</sup> July 2022 to 30<sup>th</sup> June 2023.

### **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:

**(i) Substitution of Expensive Imported Fossil Fuels with Solar PV Energy:**

The first project under this initiative is to be developed at Kot Addu / Muzaffargarh, Punjab with a capacity of 600 MWp. The Government plans to add approximately 6,000 MW solar PV capacity under this initiative primarily through competitive bidding. PPIB floated tender for 600 MWp solar PV project at Kot Addu / Muzaffargarh on February 15, 2023 with bid submission deadline of 31st May, 2023. However, PPIB received no bids for the aforementioned tender. PPIB will refloat the tender for the 600 MWp solar PV project Kot Addu / Muzaffargarh after the revision of tariff benchmark by NEPRA.

**(ii) Solar PV Generation on 11 kV Feeders:**

Significant number of electricity consumers in Pakistan suffer from poor power quality (scheduled & unscheduled outages, low voltage, etc.). Decentralized, medium-scale Solar PV power can contribute cost-efficiently to alleviate some of these problems by feeding directly into the medium-voltage (MV) network, thereby improving the local losses and voltage situation. PPIB prepared RFP documents for procurement of Solar PV projects of suitable capacity upto maximum 4 MW through competitive bidding process at 11 kV feeder level and distributed among all the DISCOs. DISCOs will float the RFP immediately after approval of RFP and determination of Benchmark Tariff by NEPRA.

**(iii) Solarization of Public Sector Buildings:**

Solarization of public sector buildings will help in meeting certain portion of electricity load through clean solar energy technology, reduce electricity bills of public offices and relieve electricity utilities/ distribution companies from long-term dues. PPIB has been tasked to carry out the solarization of public buildings through competitive bidding on behalf of the public sector entities (the “Procuring Agencies (PAs)”). PPIB has tendered eighty-five (85) public sector buildings on own cost model for solarization till date.

**STEPS & MEASURES TAKEN BY PPIB FOR PROMOTION AND DEVELOPMENT OF RENEWABLE ENERGY DURING 2022-23:**

A number of supportive measures in order to promote ARE technologies and to attract private sector investments. Some of the supportive measures taken by PPIB are as follows:

PPIB proactively facilitated the RE power projects in achieving their project milestones and resolution of issues and impediments faced by the project sponsors from different public sector entities.

PPIB engaged with World Bank to carry out an initial study on renewable energy development in Balochistan titled “Balochistan Renewable Energy Development Study” with the objective of strategic development of utility-scale solar and wind power in Balochistan to help meet Pakistan’s ambitious renewable energy targets for the power sector and support the broader transition that is needed to achieve “affordable, reliable, sustainable and modern energy for all”.

An online net-metering portal (ONMAP) was redesigned and reactivated in IESCO and LESCO for online processing consumer applications for net-metering based systems.

PPIB organized an Investors Conference, on September 14, 2022, at Islamabad in order to present the salient features of the Framework Guidelines for Fast-Track Solar PV Initiatives 2022 to the prospective investors and seek their feedback.

A program for training of solar technicians has been initiated with the support of GIZ under which customized training to 500 technicians at relevant Pakistani training institutions will be provided on Competence Based Training & Assessment (CBT&A) approach as per National Vocational Qualification Framework (NVQF).

## **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.

### **MASTER AGREEMENT AND PPA AMENDMENTS:**

- Amendments in Master Agreement and PPA with an 1PP resulted in immediate savings of approximately Rs. 10 billion in FY 2022-23.
- In recently negotiated PPA billing mechanism has been shifted from monthly to hourly basis. Claw-back mechanism and concept of capping of capacity has been introduced. This resulted in saving of approximately Rs. 44 billion in terms of both CPP and EPP annually throughout the remaining lifespan of projects.
- In the tariff petition submitted to NEPRA, some power plants had requested a levelized Tariff. However, contesting over various tariff components, the CPPA-G team convinced NEPRA for reduction in tariff. As a result, electricity consumers will now reap the benefits of approximate savings amounting to Rs. 30 billion against this reduced levelized Tariff.
- Operationalization of new RLNG plant will approximately save Rs. 3 to 4 billion per annum due to its higher thermal efficiency as compared to the existing plants.
- Amendments in bagasse based PPA will result in approximate savings of Rs.5 billion to the power consumers.

### **DEALING THE CHALLENGE OF FOREIGN EXCHANGE :**

- Side Agreement with recent coal project to settle Capacity Deductions and Liquidated Damages against the Company's claim of foreign exchange non-availability. Risks associated with PPMC has been avoided particularly the risks to declare GoP default and saved approximately Rs. 8 billion.
- Devised mechanism for procurement of coal in Pak Rupees instead of FX. Approximately 1 million tons has been procured and estimated savings passed on to the consumers ranges from 3000-5000 Rs per ton through such procurement, which is approximately Rs. 30-50 billion for the year.

### **DISALLOWANCE OF INADMISSIBLE CLAIMS OF IPPs:**

- While preaudit and processing the invoices, disallowed inadmissible claims of IPPs amounting Rs. 118 billion approximately, which proves vigilance of whole team.

### **CONTRACT FOR ADDITIONAL POWER PROCUREMENT:**

- Contracting of 10d MW additional power from Iran for Gwadar, Baluchistan and amendment in the existing agreement was signed.

### **SUCCESSFUL INTEGRATION OF ELECTRICITY IN THE NATIONAL GRID:**

- Successful integration of 3,243 MW in the National Grid after incurring substantial man hours of CPPA-G.

### **PAYMENT TO IPPS & TIMELY RELEASE OF GOP SUBSIDIES :**

- Disbursement to IPPs during FY 2022-23 was approximately Rs. 3 trillion out of which Rs. 536 billion was disbursed during June 2023. Release of the subsidies during FY 2022-23 was approximately Rs. 905

billion out of which Rs. 365 billion was released in June 2023.

### **CTBCM TEST RUN PLAN:**

- A test run plan encapsulating 24 actions and 6 specific directions has been undertaken by CPPA-G.
- Development of complete contractual canvas for competitive regime including new Market Contracts, Admission Application, Market Participation Agreement, Service Provider Agreement, Use of System Agreement, Connection Agreements etc.

### **CORPORATE GOVERNANCE COMPLIANCE:**

- Ensured Compliance of the Companies Act, 2017 and Public Sector Companies Corporate Governance Rules, 2013.

### **HUMAN RESOURCE:**

- Successfully concluded the inaugural promotion cycle for the year 2022-2023.
- Through both internal and external training initiatives, employees were equipped with valuable knowledge and competencies.
- Valuable contribution for Women in Power sector through membership of We Power initiative of World Bank and secured 22 scholarship slots for Asian institute of Technology Bangkok.
- Upgradation of Fire-Fighting System.
- Automation of Leave management Process.

### **INFORMATION TECHNOLOGY INITIATIVES:**

- Successful implementation of the Integrated Management System.
- Inhouse development of Market Management System (MMS), automating all core Market Operator Business Processes. This IT application will enable transparent and reliable market trading. This resulted in approximate savings of Rs. 900 million in Capex and Rs.270 million annual recurring cost.
- Daily Merit Order Generation System, Fuel Stock Management, CPPA and MO Websites, and CDPX portal integration with the Electronic Contents Management System (ECM) were all successfully completed.
- Implementation of ERP Financials System for Market Operations

### **ASSISTANCE TO POWER SECTOR:**

- Assistance on following critical assignments to the Power Division.
- Development of National Electricity Plan and Monitoring framework
- Procurement Plan based on EDEIP (component-IV)
- Circular debt management framework
- Development and regular updation of Circular Debt Management Plan (CDMP) for Power Sector of Pakistan.

**TARGETS DURING THE PRECEDING YEAR:**

- Efficient management of legacy Power Purchase Agreements on behalf of Distribution Companies as per applicable Policy and Regulatory Framework.
- Design, development, operationalization and efficient administration of wholesale competitive electricity market of Pakistan.
- Compliance of the Companies Act, 2017 and Public Sector Companies Corporate Governance Rules, 2013.
- Verification of invoices in the light of relevant provisions of contractual and regulatory framework; ensuring that claims are correct as to amount, account and legitimacy.
- Imposition of Liquidated Damages to Generation Companies.
- Perform billing and settlement functions in transparent manner.
- Collection/ recovery from DISCOs.
- Optimum utilization of cash inflows for smooth operations of IPPs.
- Settlement of payables to IPPs and others.
- Continuous improvements in the new PPAs/EPAs through negotiation; learning curve from the previously signed contracts and setting benchmark the latest negotiated PPA/EPA.
- Technology enablement for automation of business processes to streamline business for simplicity, increase service quality, improve service delivery, and ease employee work life through digital transformation.
- Develop and execute employee engagement and development programs to increase talent retention and overall productivity of the organization.
- Provide support on development of energy policies, strategic plans, tariff development & adjustments

**RELEVANT STATISTICS:****POWER PROCUREMENT-FUEL TYPE WISE:**

| Fuel Type    | In Million Rs. | % Age |
|--------------|----------------|-------|
| WAPDA Hydel  | 102,869        | 4%    |
| Thermal      | 111,880        | 4%    |
| Coal         | 769,236        | 30%   |
| Nuclear      | 299,975        | 12%   |
| IPP Hydel    | 116,034        | 4%    |
| RFO          | 240,844        | 9%    |
| RLNG/Gas/HSD | 782,6285       | 30%   |

|              |                  |             |
|--------------|------------------|-------------|
| Bagasse      | 11,186           | 0%          |
| Wind         | 119,529          | 5%          |
| Solar        | 31,350           | 1%          |
| Import       | 11,764           | 0%          |
| Mixed        | 1,309            | 0%          |
| <b>Total</b> | <b>2,598,662</b> | <b>100%</b> |

**PAYMENT TO POWER PROCEDURES-FUEL TYPE WISE:**

| <b>Fuel Type</b> | <b>In Million Rs.</b> | <b>% Age</b> |
|------------------|-----------------------|--------------|
| WAPDA Hydel      | 110,803               | 4%           |
| Thermal          | 149,198               | 5%           |
| Coal             | 707,475               | 23%          |
| Nuclear          | 288,674               | 10%          |
| IPP Hydel        | 113,521               | 4%           |
| RFO              | 352,058               | 12%          |
| RLNG/Gas/HSD     | 838,920               | 28%          |
| Bagasse          | 14,673                | 1%           |
| Solar            | 30,993                | 1%           |
| Import(Iran)     | 18,051                | 1%           |
| Wind             | 149,973               | 5%           |
| Mixed            | 166,066               | 9%           |
| <b>Total</b>     | <b>3,040,405</b>      | <b>100%</b>  |

### **National Power Parks Management Company Ltd. (NPPMCL)**

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

The configuration of each of the Power Plant is 02 Nos. state of the art Frame 9HA.01 Gas Turbines of General Electric manufactured in France, 02 Nos. HRSGs and 01 No. Alstom Steam Turbine are at the heart of the power plants making both of them the most efficient plants in Pakistan. Guaranteed Net thermal efficiencies, at reference site conditions, were 62.2% for HBS & 61.7% for Balloki which were achieved.

HBS and Balloki Complexes achieved Commercial Operation Dates (CODs) on May 9, 2018 and July 29, 2018 respectively. HBS power plant has successfully completed five years of commercial operation whereas Balloki power plant will complete its 5th year of commercial operation on 28th July 2023. Since commissioning till June 2023, NPPMCL has exported approx. 72.3 billion kWh to the National Grid.

O&M Contract for HBS Power Plant was awarded to SEPCO-III while the one for Balloki was awarded to TNB Remco, each for the period of twelve (12) years.

The Long-Term Service Agreement (LTSA), for the maintenance of Gas Turbines of both sites, was awarded to the OEM of the Gas Turbines i.e., General Electric for a period of twelve (12) years.

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

| <b>Key Performance Indicators<br/>(July 2022-June 2023)</b> | <b>Balloki</b> | <b>HBS</b> |
|---|----------------|------------|
| Net energy export (GWh)                                     | 6,863          | 6,521      |
| Demand from NPPC (GWh)                                      | 6,864          | 6,539      |
| Declared Capacity (GWh)                                     | 9,587          | 7,838      |
| Capacity Utilization Factor (%)                             | 71%            | 83%        |
| Complex Availability (%)                                    | 95%            | 77%        |

#### **Major Maintenance Activities:**

##### **a) Haveli Bahadur Shah Plant:**

- ST Generator Robotic Inspection was performed as per the recommendations of OEM from 1<sup>st</sup> October 2022 to 19<sup>th</sup> October 2022.
- Combustion inspection (CI) of GT-1 was performed by LTSA Contractor from 18<sup>th</sup> February 2023 to 2<sup>nd</sup> March 2023.



- Combustion Inspection (CI) of GT-2 was performed by LTSA Contractor from 3<sup>rd</sup> March 2023 to 15<sup>th</sup> March 2023.
- Placement, Installation, Testing & Commissioning of new Unit Auxiliary Transformers (UAT-1&2) was carried out from 12<sup>th</sup> April 2023 to 27<sup>th</sup> April 2023.

#### **b) Balloki Power Plant:**

- Borescope inspection of GT-1 was performed by LTSA Contractor from 23<sup>rd</sup> September-2022 to 25<sup>th</sup> September-2022.
- Borescope inspection of GT-1 was performed by LTSA Contractor from 4<sup>th</sup> November-2022 to 7<sup>th</sup> November-2022.
- GT-1 Combustion Inspection (CI) was carried out from 1<sup>st</sup> till 14<sup>th</sup> February-2023.
- Borescope inspection of Compressor and Turbine sections of GT-1 was performed by LTSA Contractor on 6<sup>th</sup> February-2023.
- Replacement of Pressure Safety Valve (PSVs) of HP drums & drain valves of HRSG-1&2, and PSVs of LP Drum & LP Supper Heater of HRSG-1.

#### **CSR/EVENT/ACTIVITIES REPORT:**

##### **HBS Power Plant:**

- The grocery distribution program successfully reached out to a significant number of beneficiaries, including individuals and families facing economic hardships, unemployed individuals.
- 500 plants were planted at site to keep the environment Clean.
- installed a water cooler in the local school to provide free, clean drinking water to the students.

##### **Balloki Power Plant:**

- Essential foods items distributed to families affected by flood.
- Tree plantation on 14<sup>th</sup> August 2022 (Pakistan Independence Day) at Site.
- Annual Sports Gala (Cricket) inter-departmental and across Power Plants (Balloki & Bhikki).
- Essential Food Items distributed among the nearby Plant premises Villagers (Tirath, Partabgarh, Wan Khara, and Wan Adhan).

### POWER HOLDING LIMITED

Tariffs notified by Government of Pakistan (GoP) do not cover cost of services delivered, high distribution and transmission losses and low revenue collection of distribution companies; hence power sector companies are facing financial problems. Moreover, an increase in thermal generation through furnace oil also added to the cost of generation which is not being fully recovered through tariff and even not covered in subsidy by Government of Pakistan (GoP). Keeping in view prevailing acute power shortage in the country, the Government of Pakistan (GoP) is determined to resolve this issue by taking short term and long term measures including resolution of circular debt, implementation of cost recovery tariff, reduction in transmission and distribution losses and improvement in recoveries. Power Holding Limited (PHL) is a special purpose vehicle with specific mandate of holding debt of power sector and is a provision of channel for servicing this debt. The company was initially incorporated as Private Limited Company however subsequent to issuance of Pakistan Energy Sukuk-I, status of company has been converted from Private Limited to Public Limited with effect from 01-04-2019. The company is wholly owned by the Government of Pakistan and is under the administrative control of Ministry of Energy (Power Division). Syndicated Term Finance Facility, have been executed pursuant to the approval of the Economic Coordination Committee (ECC) of the Cabinet and terms and conditions approved by the Finance Division. The disbursement receipts from these facilities were utilized for the purposes of funding of repayment liabilities of the DISCOs/ payments to the CPPA (G) for power sector payables repayment.

Summary of PHL financing facilities as at 30-06-2022 is re-produced below:

| Sr. No. | Facility                               | Nature         | Outstanding Amount | Tenor/ Grace Period       | Pricing  | Principal Repayment Responsibility |
|---------|--|----------------|--------------------|---------------------------|--|------------------------------------|
| 1       | <b>82.00 Bln PPTFCs</b>                |                |                    |                           |  |                                    |
|         | Rs 82.00 bln                           | Fresh facility | 82,000,000,000     | 7 year / 3 year           | 6MK + 1.00%                                    | Finance Division                   |
| 2       | <b>200.00 Bln PES-I</b>                |                |                    |                           |  |                                    |
|         | Rs. 200.00 bln PES-I                   | Fresh facility | 200,000,000,000    | 10 Year (Bullet Maturity) | 6MK+2% (1.20% rebate on payment in 30 days)    | Finance Division                   |
| 3       | <b>199.9668 Bln PES-II</b>             |                |                    |                           |  |                                    |
|         | Rs. 199.9668 bln PES-II                | Fresh facility | 199,966,800,000    | 10 Year (Bullet Maturity) | 6MK - 0.10%                                    | Power Sector                       |
| 4       | <b>Rs. 12.50 bln (I) (dd 31-03-23)</b> |                |                    |                           |  |                                    |
|         | Rs. 12.50 bln (I)                      | Fresh facility | 12,500,000,000     | 5 year / 2 year           | 3MK+1.20% (0.60% rebate on payment in 30 days) | Finance Division                   |
| 5       | <b>Rs. 44.534 bln (dd 31-03-23)</b>    |                |                    |                           |  |                                    |
|         | Rs. 44.534 bln                         | Fresh facility | 44,533,852,446     | 5 year / 2 year           | 3MK+1.20% (0.60% rebate on payment in 30 days) | Finance Division                   |
| 6       | <b>Rs. 110.283 bln (dd 31-03-23)</b>   |                |                    |                           |  |                                    |

|              |                                      |                   |                        |                    |  |                  |
|--------------|--------------------------------------|-------------------|------------------------|--------------------|--|------------------|
|              | Rs.<br>110.283 bln                   | Fresh<br>facility | 110,283,333,333        | 5 year / 2<br>year | 3MK+1.20% (0.60%<br>rebate on payment in<br>30 days) | Finance Division |
| <b>7</b>     | <b>Rs. 115.969 bln (dd 31-03-23)</b> |                   |                        |                    |  |                  |
|              | Rs.<br>115.969 bln                   | Fresh<br>facility | 115,969,466,667        | 5 year / 2<br>year | 3MK+1.20% (0.60%<br>rebate on payment in<br>30 days) | Finance Division |
| <b>Total</b> |                                      |                   | <b>765,253,452,446</b> |                    |  |                  |

- During the year under review, PHL has paid Principal amounting to Rs. 35.00 billion to the syndicate banks from budgetary allocation and consequently PHL Debt has been reduced from Rs. 80.253 billion to 765.253 billion as at 30-06-2023.

- During the FY 2022-23 rescheduling of PHL Debt amounting to Rs. 283.28/6 billion has been executed with the syndicate banks whereby grace period of 02 years for principal repayments has been availed and principal repayments have been deferred for a period of two years.

- During FY 2022-23 Rs. 108.435 billion has been repaid to the lenders on account of mark-up in respect of PHL Debt facilities in coordination with CPPA.

- Budgetary allocation of Rs. 82.00 billion has been made for FY 2023-24 for repayment of principal portion of PHL Debt.

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

### **GENCO Holding Company Limited (GHCL)**

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

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

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

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

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

The Company is responsible to perform the following:

To liaise with GoP, particularly MoWP on behalf of GENCOs and to take necessary steps for implementation of the GoP policies with regards to GENCOs. To act on behalf of GENCOs in all matters concerning the GENCOs relationship under any agreement or law with WAPDA, NTDCL, CPPA-G, DISCOs, IPPs and NEPRA on behalf of GENCOs, To manage the transfers and posting of GENCOs personnel including the transfers, secondment, or posting on deputation of personnel to or from the one GENCO to another or any other organization or department. In order to cut down the operational & management expenditures and to reduce burden on electricity consumers, the Power Division has decided that all the GENCOs shall be merged / amalgamated with the GHCL. Pursuant to this merger the GENCOs shall operate as one company and the functions of Board of Directors of all the GENCOs will be transferred to the GHCL Board. The process of merger has been initiated by GHCL through hiring of professional consultants having expertise in financial, legal & human resources fields.

### Jamshoro Power Company Ltd. (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 2022-23:

| Unit No.                               | Make                      | Commissioning Date | Installed Capacity MW | Present Capacity MW | Fuel Type | Net Electrical Out during 2022-23 (GWh) | Fuel Mix                                       |
|--|---------------------------|--------------------|-----------------------|---------------------|-----------|---|--|
| <b>Thermal Power Station Jamshoro</b>  |                           |                    |                       |                     |           |   |  |
| ST- 1                                  | M/s FUJI Elect. CO. Japan | 1990               | 250.00                | 182.45              | F. Oil    | 25.404                                  | 100%   |
| ST- 2                                  | M/s CMEC, China           | 1989               | 210.00                | 154.73              | F. Oil    | -                                       | 0%   |
|  |                           |                    |                       |                     | Gas       | -                                       | 0%   |
|  |                           |                    |                       |                     | RLNG      | -                                       | 0%   |
|  |                           |                    |                       |                     | Total     | -                                       | 0%   |
| ST- 3                                  | M/s CMEC, China           | 1990               | 210.00                | 155.36              | F. Oil    | -                                       | 0%   |
|  |                           |                    |                       |                     | Gas       | -                                       | 0%   |
|  |                           |                    |                       |                     | RLNG      | -                                       | 0%   |
|  |                           |                    |                       |                     | Total     | -                                       | 0%   |
| ST- 4                                  | M/s CMEC, China           | 1991               | 210.00                | 156.48              | F. Oil    | -                                       | 0%   |
|  |                           |                    |                       |                     | Gas       | -                                       | 0%   |
|  |                           |                    |                       |                     | RLNG      | -                                       | 0%   |
|  |                           |                    |                       |                     | Total     | -                                       | 0%   |
| <b>Gas Turbine Power Station Kotri</b> |                           |                    |                       |                     |           |   |  |
| 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       | -                                       |  |
| <b>Coal Power Project, Jamshoro</b>    |                           |                    |                       |                     |           |   |  |

|             |   |                   |        |                             |  |                             |  |
|-------------|---|-------------------|--------|-----------------------------|--|-----------------------------|--|
| Unit #<br>5 | Siemens,<br>Germany &<br>Harbin Electric<br>International,<br>China | Not Yet Installed | 660 MW | To be<br>declared<br>on COD | Coal<br>(Primary)<br>Gas and<br>HSD as<br>startup fuel | Under<br>Construction       | i) 100%<br>sub-<br>bituminous<br>coal when<br>lignite is<br>not<br>available.<br>ii) Blended<br>coal with<br>20% lignite<br>and 80%<br>sub-<br>bituminous<br>coal. |
| Unit #<br>6 | Siemens,<br>Germany &<br>Harbin Electric<br>International,<br>China | Not Yet Installed | 660 MW | To be<br>declared<br>on COD | Coal<br>(Primary)<br>Gas and<br>HSD as<br>startup fuel | Contract Not<br>Yet Awarded | i) 100%<br>sub-<br>bituminous<br>coal when<br>lignite is<br>not<br>available.<br>ii) Blended<br>coal with<br>20% lignite<br>and 80%<br>sub-<br>bituminous<br>coal. |

|   |               |               |             |
|---|---------------|---------------|-------------|
| <b>TOTAL JPCL FUEL-WISE GENERATION</b><br>• July-22 to June-23. | <b>F. Oil</b> | <b>25.404</b> | <b>100%</b> |
|   | <b>Gas</b>    | <b>-</b>      | <b>0%</b>   |
|   | <b>RLNG</b>   | <b>-</b>      | <b>0%</b>   |
|   | <b>Total</b>  | <b>25.404</b> | <b>100%</b> |

### Maintenance/ Overhauling:

ABI of TPS Jamshoro Units ST-1, ST-2, ST-3 & ST-4 were scheduled during Nov-22, Dec-22, Oct-22 & Jan-23 respectively.

|  |               |
|--|---------------|
| <b>NEPRA Approved Capacity (MW)</b>                      | <b>649.02</b> |
| <b>Plant Availability Factor FY 2022-23 (%)</b>          | <b>91.78</b>  |
| <b>Plant Average Loading FY 2022-23 (MW)</b>             | <b>69</b>     |
| <b>Utilization Factor on NEPRA Approved Capacity (%)</b> | <b>1.60</b>   |

Note: GTPS Kotri De-Licensed by NEPRA w.e.f 13.02.2020.

• **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). |
|-------|--|---|

*Siemens-HEI Joint Venture came out as the Lowest Evaluated Bidder.*

**Notice to Proceed (NTP):**

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

**Contractual Completion:**

28<sup>th</sup> December 2021

**Expected Completion:**

28<sup>th</sup> November 2023

**Physical Progress at site (Lot-I):**

|                                 |   |      |
|---------------------------------|---|------|
| Overall Progress of the Project | : | 93 % |
| Civil Works                     | : | 95 % |
| Engineering & Design            | : | 99 % |
| Installation & Erection         | : | 86 % |

**ADB Loan Status:**

In Million USD

| Loan # | Allocation | Disbursement<br>(Up to 30.06.2023) | Availability Period        |
|--------|------------|------------------------------------|----------------------------|
| 3090   | 658        | 430.670                            | 30 <sup>th</sup> June 2023 |
| 3092   | 30         | 15.230                             | 30 <sup>th</sup> June 2023 |

• **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 an extension of common facilities                        | USD 303 Million – Still not signed due to pending policy decision of GoP |
| 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:**

The following Facilities of Unit-II have been constructed at the site under ADB Loan 3090-PAK.

- Chimney
- Intake Water System
- Coal Unloading System & Railway
- Demi Water System
- Central Control Room
- Admin Building

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. Power Division has constituted a committee on LOT-II, whose proceedings are yet to be communicated.

• **Bottlenecks**

**Ash Land Pond:**

- For 100 Acres of Land, the case was submitted to the Revenue Department of Sindh. The Sindh cabinet in its meeting held on 02.08.2022 has deferred the agenda of Ash Pond Land allotment and directed JPCL to obtain fresh approval of SEPA on the new proposed land.
- Through Consultant M/s Global Environmental Engineering Consultant (GEMS), JPCL has started the revision of the Environmental Impact Assessment (EIA) for fresh approval of SEPA.
- The GEMS has submitted the draft EIA on 23.09.2022. PIU team of JPCL has reviewed the draft report and is visiting office of the GEMS for further discussion of the same.
- The matter is pending with Sindh Cabinet for its approval.

**Working Capital:**

- Working Capital for 120 days (90 days fuel inventory and one-month trade receivables) for operations (as per NEPRA) estimating to PKR 35 billion (@ Imported Coal Price USD 249 per MT) has to be arranged as a loan.



- ADB has been approached through MoE (Power Division) and EAD to allocate US\$ 40 million from the “Unallocated” head of Loan 3090.
- Various commercial Banks have been approached for WC Laon.

## CENTRAL POWER GENERATION COMPANY LIMITED / GENCO-II

Guddu Thermal Power Station is the biggest Thermal Power Generation Complex of Pakistan in public sector and is located in the province of Sindh, having total installed capacity of 2402 MW. A total number of 16 Units are installed at this Complex. Guddu Thermal Power Station is situated on the right bank of River Indus near Guddu Barrage, 10 km from Kahsmore in District Kashmore (Sindh). The nearest approaching airports are Rahimyar Khan at 85 km and Sukkur at 160 km. It is a confluence of three provinces i.e. Sindh, Punjab & Baluchistan. Since Guddu is located in the Centre of WAPDA transmission network, hence the Generating Units are connected with 132, 220 and 500 kV lines. These lines are also interlinked through Auto Transformers for free flow of power according to the load requirement. The transmission lines emanating from Power Station are as under:

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

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

|                                    |   |                  |
|------------------------------------|---|------------------|
| <b>Mari</b>                        | = | <b>110 MMCFD</b> |
| <b>Kandh Kot – I, II &amp; III</b> | = | <b>250 MMCFD</b> |

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.

Month wise generation for the year 2022-23 is as under:

| Month        | Gross Generation (KWh) |
|--------------|------------------------|
| JULY-22      | 546,034,118            |
| AUGUST-22    | 488,618,981            |
| SEPTEMBER-22 | 449,395,341            |
| OCTOBER-22   | 518,342,632            |
| NOVEMBER-22  | 374,999,056            |
| DECEMBER-22  | 355,452,383            |

|                               |                      |
|-------------------------------|----------------------|
| JANUARY-23                    | 289,647,442          |
| FEBRUARY-23                   | 293,552,991          |
| MARCH-23                      | 366,602,417          |
| APRIL-23                      | 330,997,798          |
| MAY-23                        | 344,388,195          |
| JUNE-23                       | 309,064,349          |
| <b>Total During FY2022-23</b> | <b>4,667,095,703</b> |

| Block        | Unit  | Net Derated Capacity (MW) | Net Generation (MkWh) | Max: Load (MW) | Availability factor (%) | Load factor (%) | Utilization factor (%) | Efficiency (%) |
|--------------|-------|---------------------------|-----------------------|----------------|-------------------------|-----------------|------------------------|----------------|
| I            | 11-13 | 390                       | 19.421                | 95             | 2.54                    | 2.35            | 0.86                   | 0.05           |
| II           | 5-10  | 530                       | 1957.127              | 390            | 77.59                   | 58.18           | 41.25                  | 31.77          |
| V            | 14-16 | 720.79                    | 2636.124              | 533            | 50.64                   | 43.99           | 40.63                  | 29.62          |
| <b>Total</b> |       | <b>1640.79</b>            | <b>4612.672</b>       | -              | -                       | -               | -                      | -              |

## NORTHERN POWER GENERATION COMPANY LIMITED / 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 include Major Overhauling of Turbine and Generator, Annual Boiler Inspection, Combustion Inspection of Gas Turbines and Condenser Cleaning. During FY 2022-23, No substantial generation of electricity could be made from NPGCL Plants due to no demand from NPCC. However, machines remained available for generation in Standby mode.

### Overall Activities

#### 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.
- DC Seal Oil Motor of Unit No.2 replaced along with accessories.
- Chemical Analysis of Transformer oil and Dielectric Strength test, Capacitance and Dissipation Factor (C&DF) test, Transformer Turn Ratio (TTR) test of Transformers of Unit 1, 2 & 3 was carried out.
- Installation, Testing/Commissioning of Control Panel for CAB Lift, Repair, Maintenance and Overhauling of CAB Lift carried out.
- Replacement of Relays of Circulating Water Pump (CWP).
- 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.
- Alkaline washing of Air Pre-Heaters of all the Units.
- Analysis of each RFO tanker for moisture, specific Gravity/ temperature& calorific value, cross check /super test for complete analysis of RFO.

**Phase-II (Unit 5 & 6):**

- Electrical and mechanical maintenance of Taleeri Tube wells carried out. Overhauling of Tube well No. 22 completed successfully and was put into operation.
- Damaged portion of Taleeri tube well pipeline was replaced with new one and repairing of said pipeline at various points was carried out.
- Status of standby Unit-5 kept maintained and necessary inspection of equipment of said unit and preservation of boiler drums of Unit-5&6 carried out.
- After fire incident of starting transformer of Unit-5&6 and 6.6 KV Breakers of Unit-6, the electric supply was restored from Unit-4 by installing new feeder and Unit-5 was declared standby.
- After fire incident electric supplies of different sites like waste water plant, hydrogen plant, demi plants, pre-treatment plants were restored successfully.
- Damaged 6.6 KV Breakers of Unit-6 were dismantled and damaged wall of breaker room was repaired.
- Damaged starting transformer of Unit-6 was isolated from system and necessary testing and inspection of transformer was carried out.
- New 6.6 KV Feeder was laid from Unit-4 to Phase-II for TPS Residential colony.

**425 MW CCPP NANDI PUR**

- GT-2 Intake Filter House pre-filters replaced with new ones.
- HP FWP #3 DE Bearing inspection was performed.
- Pole B of GCB #1 of Steam Turbine Unit replaced.
- 11kV CCCW Motor-A bearings replaced.

**CENTRAL TURBINE MAINTENANCE WORKSHOP****FAISALABAD**

| <b>REPAIR WORKS DONE FROM 01/07/2022 TO 30/06/2023</b> |                             |                 |
|--|-----------------------------|-----------------|
| <b>Sr/No</b>   | <b>Description</b>          | <b>Quantity</b> |
| 1  | Turbine & compressor rotor  | 08 Nos.         |
| 2  | Generator Rotor             | 01 No.          |
| 3  | Heavy motor rotors          | 02 Nos.         |
| 4  | Journal bearings            | 03 Nos.         |
| 5  | Turbine diaphragm           | 01 No.          |
| 6  | Turbine nozzle support ring | 01 No.          |
| 7  | Hydrogen oil seal           | 01 No.          |

|    |                                    |           |
|----|------------------------------------|-----------|
| 8  | Material analysis of Gear          | 01 No.    |
| 9  | Repair of Isolator Contacts        | 03 Nos.   |
| 10 | Thickness checking of finned tubes | 30 Points |

### Achievements / Performance

#### THERMAL POWER STATION MUZAFFARGARH

- Net Generation of 50908119 kWh (July 2022 to June 2023)
- Projected Generation is subject to availability of Fuel and Demand from NPCC Islamabad.

#### 425 MW CCPP NANDI PUR

- Net Generation 1,276,419,000 kWh (July 2022 to June 2023)
- Projected Generation is subject to availability of Fuel and Demand from NPCC Islamabad.

#### Statistical Data

(July 2022 to June 2023)

| Name of Power Station       | Net Generation (kwh) | Gas/ RLNG Cons. (MMCFT) | Fuel oil Cons. (M.Tons) | Max Load (MW) | Availability Factor (%) | Efficiency Gross (%) |
|-----------------------------|----------------------|-------------------------|-------------------------|---------------|-------------------------|----------------------|
| <b>TPS Muzaffargarh</b>     |                      |                         |                         |               |                         |                      |
| Unit # 1 to 6               | 50,908,119           | 0                       | 14,863                  | 170           | 87.26                   | 32.22                |
| <b>425 MW CCPP Nandipur</b> |                      |                         |                         |               |                         |                      |
| GT # 1 to 3 & STG           | 1,276,419,000        | 10,809.07               | 0                       | 557           | 94.85                   | 50.43                |

### LAKHRA POWER GENERATION COMPANY LIMITED / GENCO-IV

The 150 MW FBC Power Plant, the sole Power Plant of Lakhra Power Generation Company, is under shutdown mode for want of GoP decision for Rehabilitation, since July 2017. The Feasibility Study was required to be done for that purpose. LPGCL had worked out and finalized the firm through bidding process, to get such Feasibility Study done. The whole process was initiated and completed in the light of recommendations of the Senate's Standing Committee on Power and Power Division and subsequent directions of BOD LPGCL. The matter was under process of approval of PC-II at Power Division. Whereas, the BoD LPGCL, in its 70th meeting held on 24.02.2021, declared the case of Rehabilitation of Lakhra Power Plant as 'infructuous' in view of recent decision of Government regarding closure of certain Power Plants, including therein was the existing Lakhra Power Plant. Simultaneously, on further recommendations of the Senate's Standing Committee on Power, LPGCL had also submitted, the Concept Clearance Paper for installation of new Coal Power Plant of 330 MW capacity on local coal at site of Lakhra Power Plant, to the Power Division, approval/disposal whereof is awaited.

| <b>Operational Results during 2022-23</b> |                     |                    |                       |              |   |   |          |
|---|---------------------|--------------------|-----------------------|--------------|---|---|----------|
| Unit No.                                  | Make                | Commissioning Date | Installed Capacity MW | Fuel Type    | Net Electrical Output during July-2022 to October-2022 (Gwh)-Actual   | Net Electrical Output during November-2022 to June-2023 (Gwh)-projected   | Fuel Mix |
| Thermal power Station Lakhra              |                     |                    |                       |              |   |   |          |
| ST-1                                      | M/s Dong Fang China | 06.06.1995         | 50                    | Lignite Coal | All 03 Units are under continuous shutdown since July-2017, for want of GoP's decision regarding rehabilitation of Lakhra Power Plant. Whereas, Generation License has become due, to be renewed, after 17.02.2020. | If the Plant is rehabilitated, the output would be the better one, comparatively. Secondly, the installation of new 330 MW Power Plant may effect positively upon the Company matters | --       |
| ST-2                                      | M/s Dong Fang China | 14.10.1995         | 50                    | Lignite Coal |   |   | --       |
| ST-3                                      | M/s Dong Fang China | 03.01.1996         | 50                    | Lignite Coal |   |   | --       |

|   |       |
|---|-------|
| NEPRA Approved Capacity (2×31.2 MW)               | 62.4  |
| Plant Availability Factor FY 2022-23              | U/S/D |
| Plant Average Loading FY 2022-23 (MW) Max/Min     | U/S/D |
| Utilization Factor on NEPRA Approved Capacity (%) | U/S/D |

## NATIONAL ENGINEERING SERVICES PAKISTAN (NESPAK)

### ONGOING PROJECTS:

During the period July 2022 to June 2023, NESPAK continued to provide consultancy services to its Clients at home and abroad on 253 multidisciplinary projects. Following are the major ongoing projects of NESPAK:

- Reconstruction and Rehabilitation of Earthquake Affected Areas
- 4500MW Diamer Basha Dam
- Projects under Annual Development Program
- Lahore Ring Road (22.4km) Project Southern Loop (Kamahan to Adda Plot)
- National Program for Improvement of Watercourses in Pakistan, Phase-II
- 1263MW Re-Gasified Liquefied Natural Gas (RLNG) Based Combined Cycle Power Plant near Trimmu Barrage in Jhang District
- Kachhi Canal Project
- Rehabilitation and Upgradation of Balloki Barrage and Lower Bari Doab Canal System
- Punjab Intermediate Cities Improvement Investment Program (PICIIP)
- 800MW Mohmand Dam Hydropower Project
- Provincial Sector Development Project (North Punjab)
- 500kV Transmission Lines Interconnection Arrangement for Power Evacuation from Suki Kinari, Kohala and Mahl Hydropower Projects in Northern Areas of Pakistan
- Trimmu and Panjnad Barrages Improvement Project
- Balochistan Water Resources Development Sector Project (BWRDSP)
- Permanent Reconstruction Works in Federally Administered Tribal Areas (FATA)
- Strengthening of East-West Connectivity of Merged Areas (FATA) with Settled Districts and Improvement Links (AIP 2019-20-CR042)
- Roads and Infrastructure in Town of Duqm (Package-I), Oman
- Water Transmission from Hali, Yabah, Qanuna and Laith Dams to Al-Shoabih Desalination Plant Jeddah in Makkah Al-Mukarramah Region, Saudi Arabia
- 110kV Thuwal Substation/Transmission Line Project Jeddah, Saudi Arabia
- Qanuna and Yabah Dams, Saudi Arabia

### NEW PROJECTS:

During the period under review, the Company secured business worth Rs. 15.0 billion (estimated) in Pakistan and overseas. Total numbers of projects secured during this period were 174 which included 165 domestic and 09 overseas jobs. Outside Pakistan, business was won in Bahrain, Oman, Qatar, Saudi Arabia and UAE. Some major projects secured by NESPAK during this period are as follows:

- Emergency Flood Assistance Project, Khyber Pakhtunkhwa
- Project Readiness Support for Khyber Pakhtunkhwa Water Resources Development Project
- Expo Center(s) at Balochistan, Khyber Pakhtunkhwa and Punjab
- Sub-Project SOP-I, Karachi Water and Sewerage Services Improvement Project
- River Training Works and Barrage, Punjab



- Implementation of Local Area Development Program Public Health Livelihood Development and Downstream Fisheries Plans
- Multi-Storey Office Building at Commercial Plot Situated in Blue Area, Islamabad
- Development of Trunk Infrastructure Phase-I, Punjab
- Expansion and Renovation of Begum Nusrat Bhutto Sukkur Airport
- D.I. Khan Development Packages 542km
- Extension & Augmentation Works at Seven (07) Number 220kV and 500kV Grid Stations in the North (Group B) in Punjab, Khyber Pakhtunkhwa and Islamabad
- Implementation Support & Monitoring of Promotion of Mechanized Agriculture for Increasing Crop Productivity, Punjab
- Multi-Level Grade Separation at Shahdara Morr, Lahore
- Bridge at Korangi Causeway, Karachi
- Dualization of the Existing Road Al-Kamil Wal Wafi Jalan Bani Bu Hassan Jalan Bani Bu Ali in the Governorate of South Al-Sharqiyah, Oman

### **PROJECTS COMPLETED:**

During July 2022 to June 2023, NESPAK successfully completed 89 projects at home and abroad. Some important projects are:

- 1180MW Re-Gasified Liquefied Natural Gas (RLNG) Based Combined Cycle Power Plant at Bhikki, District Sheikhpura
- 425MW Combined Cycle Power Plant at Nandipur
- Transmission Scheme for Dispersal of Power from Neelum-Jhelum Hydropower
- Asphalt Road (26km) from Biayaiq to Aqir Al-Abriyyin in Wadi Shafan, Oman
- Standardization of Higher Secondary Schools in Khyber Pakhtunkhwa Province (DFID Assisted)
- 500kV Double Circuit Quad Bundle Transmission Lines from SECL Power Plant in Thar Block-I to Matiari Converter Station (approx. 200km)
- Bus Rapid Transit (BRT) Orange Line Karachi
- Naval Housing Scheme at Karsaz Phase-II, Phase-III and Phase-IV, Karachi
- Kot Belian-Tarap Road Package-3 (52km), Section of Hakla (M-1)-Yarak (D.I.Khan) Motorway
- Dualization of Naguman Shabqadar Road Section of Provincial Highway S-IA, Charsadda (13km)
- Bridge Over River Ravi at Mal Fatyana District Toba Tek Singh
- Rehabilitation & Renovation of Karachi Fish Harbour
- Infrastructure Development of Jalozai Economic Zone, Nowshera

## **POWER INFORMATION TECHNOLOGY COMPANY (PITC)**

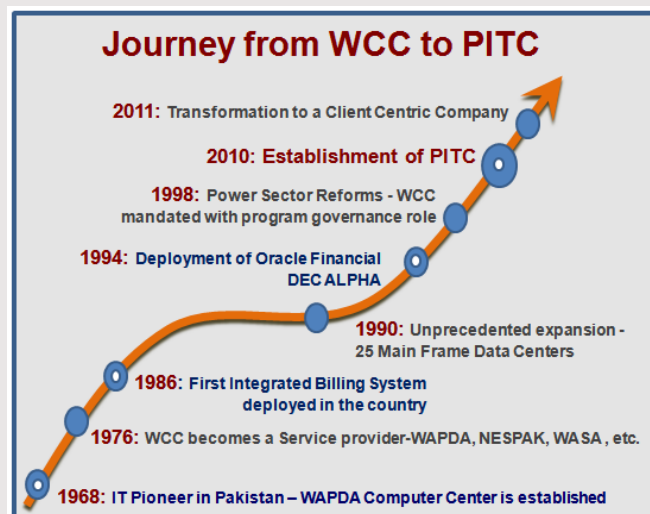
Power Information Technology Company (PITC) is the leading power sector IT company in Pakistan. It is mainly involved in all software development activities, including design, development, testing, documentation, implementation, and operation of developed applications. Company is solely responsible to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

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

The major motivation visualized by PITC is the best customer care and adequate billing software support to all power distribution companies of country except KESC –

PITC is managing this mandate through an in-house developed billing system. The system also has the capability to provide upto-date information to all stakeholders. In addition to billing and customer care system, PITC is also managing Management Information System, Line Losses System, Payroll and Store Management System, developed and implemented all over WAPDA/PEPCO/DISCOs.

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



### **Vision:**

To harness the potential of Information Technology as a key contributor in the development of Power Sector of Pakistan.

### **Mission:**

To ensure uninterrupted and quality IT services for all, through Improvement in data collection, analysis and knowledge management.

### **Objectives:**

- To deal in the business of software support for power management (Distribution, transmission and Generation) international businesses, internet service providers, remote services and / Information Technology enabled services including billing, Human Resource management, Financial management, engineering applications, software development and support services.
- To develop and maintain expertise in not just technology but also an understanding of Electricity Generation, Transmission and Distribution processes so that the solutions delivered are effective and responsive to the business needs. Provide professional inputs on strategic decisions without bias.

- To recommend ways and means to improve systems, with a view to simplify documentation and procedures, remove anomalies for the introduction of comprehensive computerization and developing databases.
- To carry-out and accomplish the job of inter-linking various organizations, departments and agencies through automation

### **Functions:**

- To provide IT enabled services including customer care & billing, HR & Financial software management, technical vetting, Losses and receivable information (MIS reports).
- To provide internet/intranet, web mail and web hosting services.
- To carry-out and accomplish the job of inter-linking various organizations, departments and agencies through automation
- To provide support to DISCO's in planning, construction operation and maintenance of their computer installations.
- To provide IT HR support to all the entities of PEPCO(DISCO's/NTDC) as and when required
- To provide and make arrangements for imparting training related to software, hardware, operational techniques, data centers management and network management
- To develop capability and expertise in software development.

### **Company Business Development Activities (2022-23)**

#### **Integrated Billing System (IBS) improvement:**

Following improvements have been made in Integrated Billing System.

- Cash and Division level workflows modelling.
- Email and SMS alerts module.
- Billing system integration for Bulk consumers.
- Bill adjustment/Cash adjustment workflow.
- Modelling and documentation of bill and cash adjustment workflows.
- Helpdesk Ticketing System implementation for DISCOs.

#### **BI Analytics for DISCOs, MoE and other Ministries:**

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

- Acquisition of TIBCO Spotfire and Single Store BI Analytics solution
- Web-Based MND/MIS Reporting System Implementation
- Web-Based Query builder for consumer profile.
- Ad-hoc Reporting of MND and Consumer Profile; The objective is to fulfill all requirement demanded by authority and DISCO
- Performance monitoring dashboard: To project daily and monthly data of billing, receivable, payments, adjustments and losses etc.
- Data sharing policy approved by MoE, Power Division
- Data exchange portal for power sector stakeholders and federal and provincial agencies in light of data sharing policy.

**Business Applications Suite Extension:**

Following extensions have been made in Business Application suite during the year 2022-23

- Development of data entry forms (master, nominee, adjustments, settlements) in EPF
- Development and rollout of store inventory system (SIS)

**Company Business Operational Activities (2022-23)**

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

**Annex-I****Current Portfolio of Upcoming Power Generation Projects**

| Sr. #                   | Project   | Sponsor/ Company Name       | Location                             | Fuel          | Capacity (MW) | Expected COD/Remarks   |
|-------------------------|---|-----------------------------|--------------------------------------|---------------|---------------|--|
| <b>2024</b>             |   |                             |                                      |               |               |  |
| 1*                      | Suki Kinari Hydropower Project  | S.K Hydro Pvt Ltd           | Kunhar River, Mansehra, KP           | Hydel         | 884           | <b>Nov-24</b><br>FC Achieved. Under Construction   |
| <b>Sub Total (2024)</b> |   |                             |                                      |               | <b>884</b>    |  |
| <b>2025</b>             |   |                             |                                      |               |               |  |
| 2                       | Riali-II Hydropower Project   | Riali Hydro Power Co.       | Ghori Wala Nullah, Muzaffarabad AJ&K | Hydel         | 7.08          | <b>Dec-25</b><br>LOS issued Under FC / under Construction  |
| 3                       | Kathai-II Hydropower Project  | Kathai-II Hydro (Pvt) Ltd.  | Kathai Nullah, Hattian, AJ&K         | Hydel         | 8.00          | <b>Dec-25</b><br>LOS issued FC in Progress   |
| 4*                      | 300 MW coal based Power Project   | CIHC Pak Power Co. Ltd      | Gwadar, Balochistan                  | Imported Coal | 300           | <b>Dec-25</b><br>LOS issued FC in progress   |
| <b>Sub Total (2025)</b> |   |                             |                                      |               | <b>315.08</b> |  |
| <b>2029</b>             |   |                             |                                      |               |               |  |
| 5                       | Turtonas-Uzghor Hydropower Project<br><b>(candidate project in the IGCEP portfolio)</b> | Sinohydro-Sachal Consortium | Golen Gol River, Chitral Valley KP   | Hydel         | 82            | <b>Dec-29</b><br>LOI issued. FS completed and approved by POE. Further processing will be as per IGCEP |

| Sub Total (2029) |   |  |                              |       |       | 82   |  |
|------------------|---|--|------------------------------|-------|-------|--|--|
| <b>2030</b>      |   |  |                              |       |       |  |  |
| 6*               | Azad Pattan Hydropower Project  | Azad Pattan Power (Pvt) Ltd.   | Jehlum River, Sudhnoti, AJ&K | Hydel | 700.7 | <b>Sep-30</b><br>LOS issued<br>FC in progress  |  |
| Sub Total (2030) |   |  |                              |       |       | 700.7  |  |
| <b>2031</b>      |   |  |                              |       |       |  |  |
| 7*               | Kohala Hydropower Project   | Kohala Hydro Company Limited   | Jehlum River/ Kohala, AJ&K   | Hydel | 1,124 | <b>Mar-31</b><br>LOS issued<br>FC in progress  |  |
| Sub Total (2031) |   |  |                              |       |       | 1,124  |  |
| <b>2032</b>      |   |  |                              |       |       |  |  |
| 8                | Athmuqam Hydropower Project<br><br>(candidate project in the IGCEP portfolio) | Korea Hydro and Nuclear Company                                      | Neelum River, AJ&K           | Hydel | 450   | <b>Dec-32</b><br>LOI issued.<br>FS completed and approved by POE.<br>Further processing will be as per IGCEP             |  |
| 9                | Rajdhani Hydropower Project   | -  | Poonch River AJ&K            | Hydel | 132   | <b>Dec-32</b><br>To be processed as per the requirements of new capacity in the IGCEP                                    |  |
| 10               | Mahl Hydropower Project<br><br>(candidate project in the IGCEP portfolio)     | CWE Investment Corporation/ China Three Gorges & Trans Tech Pakistan | Jehlum River, AJ&K/ Punjab   | Hydel | 640   | <b>Dec-32</b><br>LOI issued.<br>FS completed and approved by POE. Tariff determined by NEPRA.<br>Further processing will |  |

|                         |  |                                |                                 |           |              |  |
|-------------------------|--|--------------------------------|---------------------------------|-----------|--------------|--|
|                         |  |                                |                                 |           |              | be as per IGCEP  |
| 11                      | Ashkot Hydropower Project<br><b>(candidate project in the IGCEP portfolio)</b> | Ashkot Energy (Pvt) Ltd.       | Neelum River, AJ&K              | Hydel     | 300          | <b>Dec-32</b><br>Project has been transferred by GoAJK to PPIB for further processing as per IGCEP |
| <b>Sub Total (2032)</b> |  |                                |                                 |           | <b>1,522</b> |  |
| 12*                     | 1320MW Thar coal based Power Project   | Oracle Coal Fields PLC England | Thar Block VI, Sindh            | Thar Coal | 1,320        | Candidate project in the IGCEP portfolio   |
| 13                      | Neckeherdim-Paur Hydropower Project  | -                              | Yarkun River, Chitral Valley KP | Hydel     | 80           | To be processed as per the requirements of new capacity in the IGCEP                               |
| 14                      | Kaigah Hydropower Project  | -                              | Kaigah, Indus River, KP         | Hydel     | 548          |  |
| 15                      | Chakothi-Hattian Hydropower Project  | -                              | Muzaffarabad, AJ&K              | Hydel     | 500          |  |
| <b>Sub Total</b>        |  |                                |                                 |           | <b>2,448</b> |  |
| <b>Grand Total</b>      |  |                                |                                 |           | <b>7,075</b> |  |

\* **CPEC Projects**

*COD = Commercial Operation Date, FC = Financial Close, LOS = Letter of Support, LOI = Letter of Intent/Interest, FS = Feasibility Study, POE = Panel of Experts, IGCEP = Indicative Generation Capacity Expansion Plan*



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**MINISTRY OF ENERGY (POWER DIVISION)**  
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