



# **Year Book**

## **2018-19**



**GOVERNMENT OF PAKISTAN**  
**MINISTRY OF ENERGY (POWER DIVISION)**

**ISLAMABAD**

**[www.mowp.gov.pk](http://www.mowp.gov.pk)**



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**IN THE NAME OF ALLAH  
THE MOST BENEFICENT  
THE MOST MERCIFUL**

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## **PREFACE**

The Year Book has been prepared in accordance with rule 25(2) 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 as a permanent record a 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 requirement of Rules of Business, the Power Division has given a very comprehensive detail of its activities and achievements in brief and lucid manner.

In the Year Book the reader will find in detail the achievements of the Power Division both in respect of Power generation and its distribution to consumers in the preceding year.

It is hoped that both researchers and general public will find it a valuable document regarding the Power Sector of Pakistan.

## **INTRODUCTION**

The Ministry of Energy (Power Division) has embarked upon a comprehensive plan to augment the current and future energy needs of the country. This bold 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.

To enhance the generation of electricity special focus is being given to the Thermal and Coal Power Projects to make Pakistan energy-sufficient in the days to come besides harnessing the indigenous hydel generation resources. IPPs are also contributing in enhancement of generation of electricity in the country.

The Power Division has set its goals as under:

- Build a Power Generation Capacity that can meet Pakistan's energy needs in a sustainable manner.
- Create a culture of Energy conservation and responsibility.
- Ensure the generation of Inexpensive and affordable electricity for domestic, commercial and industrial use by using Indigenous resources such as Coal and Hydel.
- Minimize Pilferage and adulteration in fuel supply.
- Promote world class efficiency in Power Generation.
- Create a cutting edge transmission network.
- Minimize inefficiencies in distribution system.
- Minimize Financial Losses across the system.
- Align the ministries involved in the energy sector and improve the governance of all related federal and provincial departments.
- Special focus has been given to renewable energy and the Government has set the target to increase the renewable energy share to 30% by 2030.

The Government has developed a clear strategy to achieve the desired results in respect of the goals set for the Power Sector.

## **MESSAGE BY THE MINISTER FOR POWER DIVISION**

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



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

In this regard upto now the government has operationalised twenty four (24) Wind Power projects of 1233.37mw, Six (06) Solar Projects of 430 MW and eight (08) sugar mills based bagasse co-generation projects of 259.1mw. Government has taken several supportive steps for deployment of net metering systems. In this regard, 1458 solar net metering systems for 25.381mw capacity were installed during 2018-19.

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

**(Omar Ayub Khan)**

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

The energy crisis has multiple aspects. One of them was the circular debt.

The circular debt mainly arises due to line losses and theft of electricity. Due to this reason the distribution companies are not in a position to pay money to the IPPS and their GENCOs.



The Government made a plan/strategy to curb the gap between the billings and actual payments. The strategy has many aspects: On the one hand, the Government has started action against individuals and registered FIRs who were involved in Kunda's connections. As per latest data a total of 36000 FIRs have been registered while 5318 persons involved in theft have been arrested. An amount of Rs. 1368 million has been recovered from the theft campaign. On the other hand, Government has conditioned supply of electricity to a feeder with the percentage of losses. The more losses, the more load shedding on that particular feeder.

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

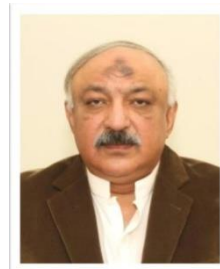
I hope that the Government will not only be able to achieve the desired results in the generation capacity of the sector but also develop good administration for curbing the losses and save the valuable money of tax payers paid for covering the losses.

**(Zahoor Hussain Qureshi)**



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

The Year Book 2018-19 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 2018-19 with the resolve that we will be able to eradicate the menace of load shedding.



In the modern world energy plays a key role in the progress and prosperity of a nation. That is why the Ministry of Energy, Power Division has left no stone unturned to deliver services to the people of Pakistan.

Thermal Power based on furnace oil & gas is about 65% of Energy mix in Pakistan that has resulted in high costs of electricity. 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 that will not only bring down the cost of energy but at the same time it is also environment friendly.

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 2018-19.

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

**(Irfan Ali)**  
**Secretary (Power Division)**

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

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

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

## **MINISTRY OF ENERGY (POWER DIVISION)**

The Ministry consists of five wings with the following distribution of work:

### **ADMINISTRATION WING**

- All administrative matters related to Ministry.
- General Section, Benazir Employees Stock Option Scheme (BESOS).
- Training/conventions/seminars local/foreign.
- Matters relating to all legal, Parliamentary, Council and Coordination.

### **POWER FINANCE WING**

- Matters relating to Power Sector Finance.
- IPPs, PHPL, CPPA.
- Circular Debt, Subsidy Cell and related matters.
- Tariff, NEPRA and related matters.
- FPA.

### **TRANSMISSION WING**

- GENCO, NTDC related matters.
- Power projects/agreements in public sector.
- Independent Transmission Line matters.
- P.M Directives on Energy generation.

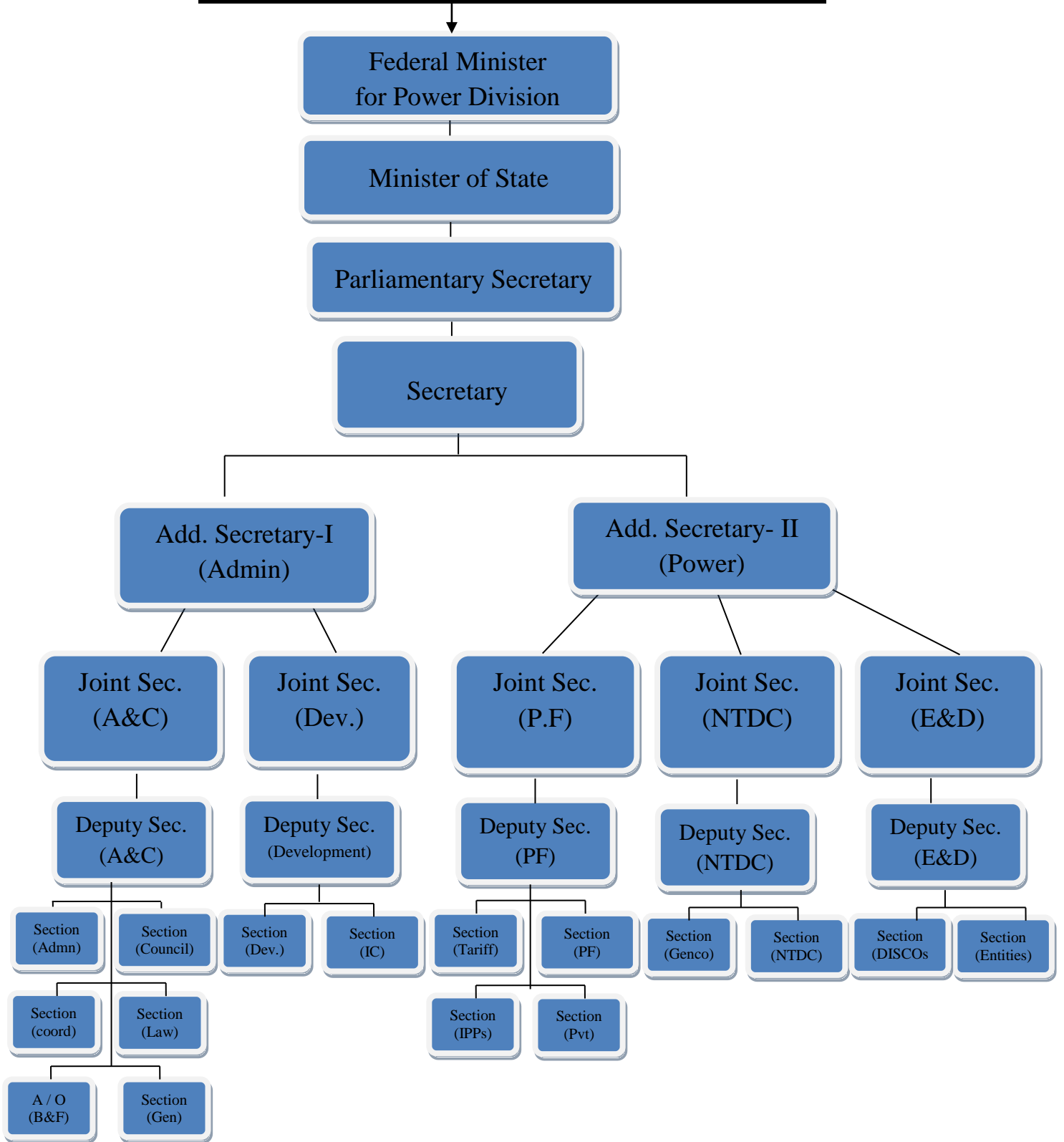
### **ENTITIES AND DISCOs (E&D) WING**

- Matters relating to DISCOs.
- Federal Complaint Cell.
- Entities, AEDB, NEECA, PPIB, CEA, KESC, NESPAK, NPCC.
- Any other task assigned by the Secretary.

### **DEVELOPMENT WING**

- All PSDP and special projects.
- All projects pertaining to entities in Power Sector.
- All matters relating to Donors.
- Project under PPPMCL, PQA.
- General matters relating to Development.

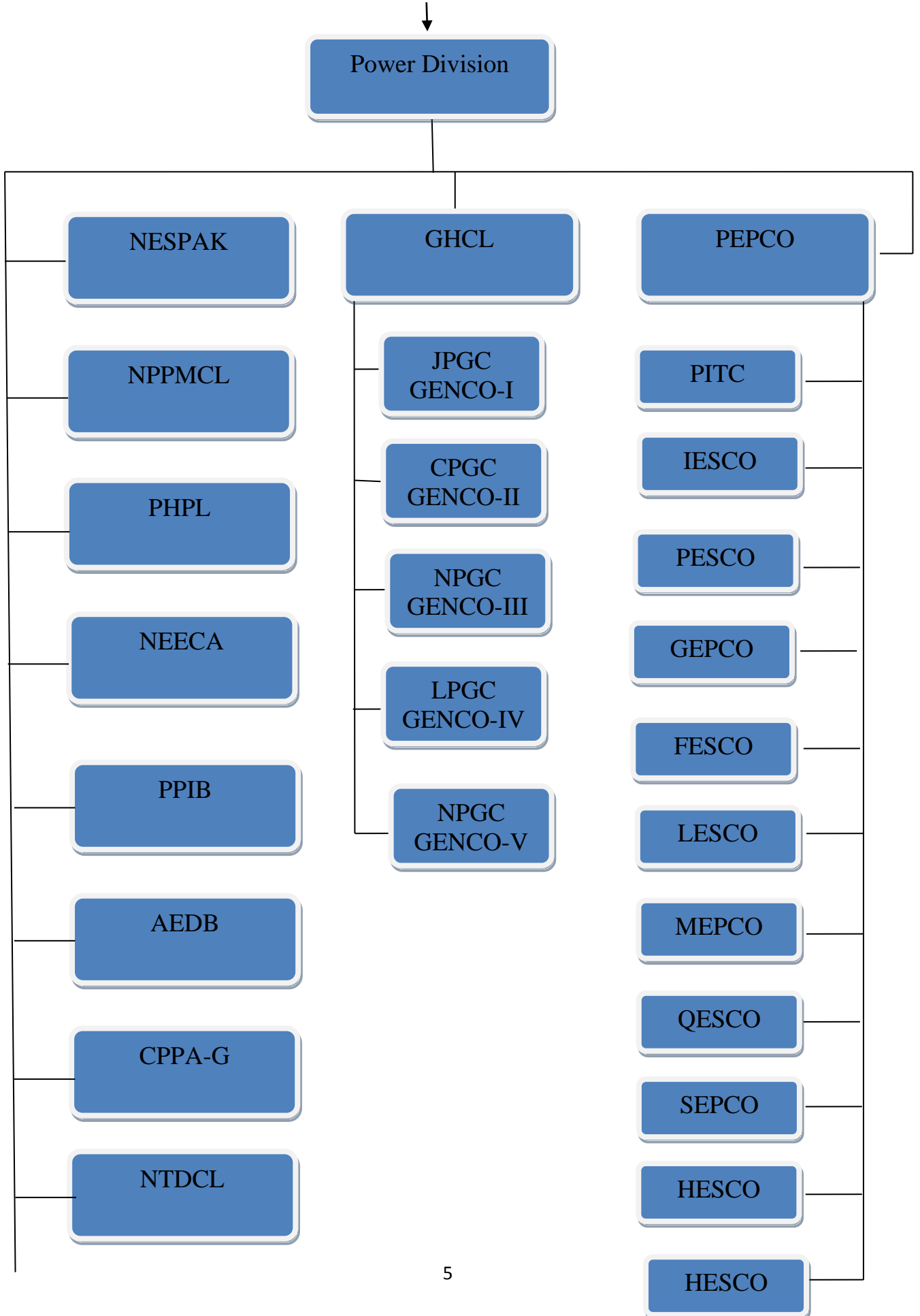
# ORGANOGRAM OF POWER DIVISION



**ATTACHED ORGANIZATIONS / ENTITIES UNDER THE  
ADMINISTRATIVE CONTROL OF POWER DIVISION**

- 1) National Energy Efficiency & Conservation Authority (NEECA), Islamabad.**
- 2) Private Power Infrastructure Board (PIIB), Islamabad.**
- 3) Alternative Energy Development Board (AEDB), Islamabad.**
- 4) National Transmission & Despatch Company Limited (NTDCL), Lahore.**
- 5) GENCO, Holdings Company (GHCL), Islamabad.**
  - i. Jamshoro Power Generation Company, (GENCO-I), Jamshoro.
  - ii. Central Power Generation Company Limited, (GENCO-II), Guddu.
  - iii. Northern Power Generation Company Limited, (GENCO-III), Muzaffargarh.
  - iv. Lakhra Power Generation Company Limited, (GENCO-IV), Jamshoro
  - v. Nandipur Power Generation Company Limited, (GENCO-V), Gujranwala.
- 6) Pakistan Electric Power Company (PEPCO) WAPDA House Lahore.**
  - i. Islamabad Electric Supply Company, (IESCO), Islamabad.
  - ii. Faisalabad Electric Supply Company, (FESCO), Faisalabad.
  - iii. Lahore Electric Supply Company, (LESCO), Lahore.
  - iv. Gujranwala Electric Power Company, (GEPCO), Gujranwala.
  - v. Sukkur Electric Power Company, (SEPCO), Sukkur.
  - vi. Multan Electric Power Company, (MEPCO), Multan.
  - vii. Peshawar Electric Power Company, (PESCO), Peshawar.
  - viii. Tribal Electric Power Company, (TESCO), Peshawar.
  - ix. Quetta Electric Power Company, (QESCO), Quetta.
  - x. Hyderabad Electric Supply Company, (HESCO), Hyderabad.
- 7) National Engineering Services Pakistan (NESPAK), Lahore.**
- 8) Central Power Purchasing Agency (CPPAG), Islamabad.**
- 9) National Power Park Management Company Limited (NPPMCL), Lahore.**
- 10) Power Holding Private Limited (PHPL), Islamabad.**
- 11) Power Information Technology Company (PITC)**

**ORGANOGRAM SHOWING ATTACHED ORGANIZATION / ENTITIES UNDER THE ADMINISTRATIVE CONTROL OF POWER DIVISION**



## **PERFORMANCE OF POWER DIVISION 2018-2019**

### **Executive 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 up gradation. Main 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 13<sup>th</sup> 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 **36000 FIRs** have been registered while **5318** persons involved in theft have been arrested. An amount of **Rs. 1368 million** has been recovered from the theft campaign. Power Division has given a target to DISCOs to recover **Rs.8,000 million** from old receivables while freezing the receivable figures as they stood on **31.10.2018**.

DISCOs have shown a record increase of **Rs. 121,102 million** in collection from October, 2018 till June, 2019 as compared to the corresponding period of last year. 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. **This can be illustrated by the decrease in line losses by 1.4%** with an impact of about **Rs. 16000 million**. This has also reduced burden on the distribution system due to removal of illegal connections.

A project of Advanced Metering Infrastructure (AMI) is being launched in LESCO and IESCO areas to overcome the problems of line losses and theft for which Asian Development Bank has committed to provide \$ 400 Million. It is now ready for execution. 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 as and where they clear feeders in their anti theft campaign.

The Power Division has drafted a new Renewable Energy Policy 2019 and circulated to all stakeholders for their input. The policy will soon be brought before the Cabinet for final approval. Accordingly it has been envisioned that by the year 2025 the share of renewable energy in the overall energy mix will be increased to 20% from the existing 4% while by the year 2030 it will be increased to 30%.

Tariff rationalization measures undertaken by the Power Division has helped reducing the rising trend in circular debt. Arrangements of Rs.200 billion from Islamic Sukuk has also helped in paying power sector dues and replacing expensive debt. Power Division has chalked out a comprehensive plan to arrest the growth in circular debt. Accordingly after June 2019, the growth will be reduced from Rs.38 billion per month to Rs.26 billion per month, by June, 2020 it will be brought to Rs. 8 billion per month.

In order to resolve consumer's grievances on the spot, DISCOs regularly conduct open Katcheries on each Saturday at Sub-Divisional level. A comprehensive monitoring via videos of each Katcherie is carried out by Secretary Power Division himself. Besides daily audio, visual, data sharing, dashboards and other modern techniques are utilized for better

service delivery. 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 118,183 complaints from Prime Minister Delivery Unit were received by Power Division out of which 105,766 complaints have been resolved while the remaining are in progress. Power Division has made significant achievements in removal of hazards from residential areas and has succeeded in removing 12,733 such hazards against 30,954 identified hazards across the country. Work on the remaining is in progress. Likewise, 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. On Power Division's special initiative of identification of Transmission and Distribution networks constraints and allocation of fund has led to transmission of record 23,049MW electricity through the system.

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



**PERFORMANCE OF  
ATTACHED ORGANIZATIONS/  
ENTITIES (2018-19)**

13(1)

## **PERFORMANCE OF PAKISTAN ELECTRIC POWER COMPANY (PEPCO)**

### **Implementation of Anti Theft Campaign as Per Directions of Prime Minister of Pakistan**

As per directions of the Prime Minister of Pakistan, a campaign to curb the menace of electricity theft has been launched since 13<sup>th</sup> 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 **36000 FIRs** have been registered while **5318** persons involved in theft have been arrested. An amount of **Rs. 1368 million** has been recovered from the theft campaign. Power Division has given a target to DISCOs to recover **Rs.8,000 million** from old receivables while freezing the receivable figures as they stood on **31.10.2018**.

Furthermore, the campaign has been launched by the DISCOs to clear the feeders from theft for declaring the same as load shedding free and providing more electricity to the bona fide consumers.

The consumers of the villages (disconnected on account of theft and outstanding arrears) have been motivated in association of PEPCO teams to pay their dues in installments for restoration of electricity supply. The supply of the bona fide consumers of villages (who paid their bills in installment) has been restored through one point supply in order to disconnect the electricity of defaulters and provide electricity to the paying consumers.

The achievement of reduction in line losses and improvement in recovery for the year 2018-19 is as under;

#### **%Age AT&C Losses (All consumers computed recovery without subsidy from October 2018 to June 2019 (when campaign was launched))**

DISCOs	October-June 2019	October-June 2018	Inc./Dec
LESCO	11.9	14.1	-2.2
GEPCO	7.5	8.0	-0.5
FESCO	8.4	9.2	-0.8
IESCO	7.6	7.8	-0.2
MEPCO	13.0	14.6	-1.6
PESCO	39.1	43.1	-4.0
TESCO	42.0	37.2	4.8
HESCO	42.7	43.6	-0.9
SEPCO	55.8	59.5	-3.7
QESCO	77.7	82.5	-4.8
<b>TOTAL DISCOs</b>	<b>20.8</b>	<b>23.2</b>	<b>-2.4</b>

After launching the Anti-theft drive in October 2018, units received are decreased significantly by 1,640 MkWh during October 2018 to June 2019 as compared with corresponding period of previous year. Moreover, line losses are decreased in the aforementioned period by 0.9%, recovery against computed billing without subsidy (private consumers) improved by 1.7%, recovery against computed billing without subsidy (all consumers) by 0.6% and AT&C Losses (private consumers) and AT&C Losses (all consumers) reduced by 2.4%, 1.4% respectively. The comparison is shown as under;

#### T&D Losses

T&D Losses	T&D Losses							
	Oct-Jun 2019			Oct-Jun 2018			Inc. / Dec. in units received w.r.t. previous year (MkWh)	Inc./Dec. c.
	Units Purchased (MkWh)	Units Billed (MkWh)	%age Losses	Units Purchased (MkWh)	Units Billed (MkWh)	%age Losses		
	76,291	63,470	16.8	77,931	64,100	17.7	1,640	-0.9%

#### AT&C Losses (private consumers)

AT&C Losses (Computed recovery without subsidy of Private Consumers)	AT& C Losses (%age)		
	Oct-Jun 2019	Oct-Jun 2018	Inc./Dec.
	20.8	23.2	-2.4

#### AT&C Losses (all consumers)

AT&C Losses (Computed recovery without subsidy of All Consumers)	AT& C Losses (%age)		
	Oct-Jun 2019	Oct-Jun 2018	Inc./Dec.
	22.8	24.2	-1.4

The detail of recovery of detection bills during campaign from 13.10.2018 to 30.07.2019 is as:

#### Anti-theft drive (13.10.2018 to 30.07.2019)

Name of company	Number of FIRs registered	Number of persons arrested	Total units charged (MkWh)	Total amount of detection bills charged (Rs. in Million)	Total amount of detection bills recovered (Rs. in Million)	%age Recovery against detection bill
LESCO	13,374	2,132	34.24	525.16	269.22	51.26
GEPCO	4,017	0	19.98	339.20	171.68	50.61

FESCO	2,896	65	20.68	330.32	289.06	87.51
IESCO	874	183	23.86	425.36	249.36	58.62
MEPCO	14,180	2,814	47.16	745.27	302.28	40.56
PESCO	1,046	356	6.19	79.59	75.56	94.94
HESCO	30	7	0.97	16.57	12.23	73.79
SEPCO	23	0	1.68	24.58	21.40	87.04
QESCO	38	26	1.15	29.11	14.44	49.60
Total	36,478	5,583	155.91	2,515.16	1,405.21	55.87

### DECREASE IN LOAD SHEDDING/INCREASE IN ENERGY SUPPLY

Due to improved recovery and effective anti-theft campaign, the number of feeders where load shedding due to losses is conducted has decreased significantly. Even during peak summer where historically the losses were on higher side, many feeders would come out of category where zero load shedding is implemented. However, due to continued watch & ward the number of feeders with zero loadshedding has been increasing. The following table clearly depicts number of feeders along with load shedding hours.

Category	%age AT&C Losses (beyond Technical Losses)	LESCO	GEPSCO	FESCO	IESCO	MEPCO	PESCO	HESCO	SEPCO	QESCO	TESCO	TOTAL
I	0 to 10	1,235	813	1,022	792	848	342	101	96	48	72	5,369
II	10to 20	314	24	10	148	401	141	42	0	6	39	1,125
III	20 to 30	132	2	0	14	83	114	67	0	7	46	465
IV	30 to 40	64	6	0	6	14	90	71	4	55	24	334
V	40 to 60	50	0	0	8	8	141	140	31	65	10	453

VI	60 to 80	0	0	0	82	2	137	70	124	137	4	556
VII	Above 80	0	0	0	15	2	54	12	233	367		683
Total		1,795	845	1,032	1,065	1,358	1,019	503	488	685	195	8,985

### RECORD RECOVERY TARGETS ACHIEVED

Due to extensive campaign and administrative plus technical efforts/reforms by the Power Division, the sector has shown a record increase of **Rs. 121,102 million** in collection from October, 2018 till June, 2019 as compared to the corresponding period of last year. This has never happened in the history so far.

#### Recovery %age against computed billing (private consumers)

Computed Recovery without subsidy (Private Consumers)	Recovery %age against Computed Billing (Without Subsidy)								
	Oct-Jun 2019			Oct-Jun 2018			Inc./Dec. w.r.t previous year		
	Billing	Collection	%age Recovery	Billing	Collection	%age Recovery	Billing	Collection	%age
	(Rs. In Million)			(Rs. In Million)					
	791,390	753,178	95.2	691,034	645,602	93.4	100,356	107,576	1.7

#### Recovery %age against computed billing (all consumers)

Computed Recovery without subsidy (All Consumers)	Recovery %age against Computed Billing (Without Subsidy)								
	Oct-Jun 2019			Oct-Jun 2018			Inc./Dec. w.r.t previous year		
	Billing	Collection	%age Recovery	Billing	Collection	%age Recovery	Billing	Collection	%age
	(Rs. In Million)			(Rs. In Million)					
	902,933	837,674	92.8	777,689	716,572	92.1	125,244	121,102	0.6

#### Billing, Collection & Recovery %age Against Computed Billing (Without Subsidy)

Description	Period	July - June	October - June
Units Billed (MkWh)	2017-18	91,902	64,101
	2018-19	93,887	63,470
Difference (MkWh)		1,985	(631)
Billing without	2017-18	1,137,169	777,690

subsidy (Million)	<b>2018-19</b>	<b>1,341,659</b>	<b>902,934</b>
Difference( Million)		<b>204,490</b>	<b>125,244</b>
Collection (Million)	<b>2017-18</b>	<b>1,034,148</b>	<b>716,572</b>
	<b>2018-19</b>	<b>1,226,211</b>	<b>837,674</b>
<b>Increase in collection (Million)</b>		<b>192,063</b>	<b>121,102</b>
Recovery Percentage	<b>2017-18</b>	<b>90.94</b>	<b>92.14</b>
	<b>2018-19</b>	<b>91.40</b>	<b>92.77</b>
<b>Improved Recovery %age</b>		<b>0.45</b>	<b>0.63</b>

### Reduction in Line Losses

The general public and the officials of DISCOs are getting aware of the message of the anti-theft campaign in the real sense and there is a visible decline in the incidents of electricity theft. **This can be illustrated by the decrease in line losses by 1.5% during the month of October 2018.** It is an encouraging result of this campaign and as it scales up, it will leave a lasting impact in the future.

### Transmission & Distribution Losses

(132 kV & Below System)

Name of DISCO	Oct-June2019				October-June 2018				Inc./ Dec.
	Units (M.kwh)			% Age Losses	Units (M.kwh)			% Age Losses	
	Purchased	Sold	Lost		Purchased	Sold	Lost		
LESCO	16,318	14,240	2,078	<b>12.73</b>	16,351	14,138	2,213	13.53	<b>-0.80</b>
GEPCO	7,293	6,679	614	<b>8.42</b>	7,442	6,799	644	8.65	<b>-0.23</b>
FESCO	9,942	9,042	900	<b>9.05</b>	9,923	8,952	971	9.79	<b>-0.74</b>
IESCO	7,922	7,265	657	<b>8.29</b>	7,970	7,276	695	8.72	<b>-0.43</b>
MEPCO	12,335	10,589	1,746	<b>14.16</b>	12,866	10,905	1,960	15.24	<b>-1.08</b>
PESCO	9,968	6,383	3,585	<b>35.96</b>	10,204	6,245	3,959	38.80	<b>-2.84</b>
TESCO	1,398	1,240	158	<b>11.29</b>	1,297	1,145	151	11.66	<b>-0.37</b>

HESCO	3,770	2,731	1,040	<b>27.57</b>	4,035	2,910	1,125	27.88	<b>-0.31</b>
SEPCO	2,831	1,874	957	<b>33.80</b>	3,151	2,081	1,071	33.98	<b>-0.18</b>
QESCO	4,514	3,428	1,086	<b>24.07</b>	4,692	3,650	1,042	22.21	<b>1.86</b>
<b>TOTAL DISCOs</b>	<b>76,291</b>	<b>63,470</b>	<b>12,821</b>	<b>16.81</b>	<b>77,931</b>	<b>64,100</b>	<b>13,831</b>	17.75	<b>-0.94</b>

### Recovery of Outstanding Dues

The anti-corruption and anti-theft drive has shown positive effects on recovery of outstanding dues as well. It has motivated the consumers (with the support of the staff) to pay the bills in time. **DSICOs recovery has shown an improvement of 1% since the launch of the campaign.**

### Tariff Determination

NEPRA had proposed an increase of Rs.3.82 per unit in the Tariff for all consumers. However, the present Government, keeping in view the interests of the most vulnerable segment of the domestic consumers, did not increase the tariff burden for around 75% of those consumers using up to 300 units/month (approx. 100 Million in number). Similarly, there was no tariff increase for the small businesses, which are the engine of economic growth in any economy. The agricultural tube well subsidy for farmers of Balochistan has been approved till 31-12-2019; while for rest of the farmers' agriculture tube well subsidy has been extended on a lesser rate of Rs.5.35/unit. Industrial Support Package has continued @ Rs.3/- for industries for their peak load consumption while for five main export-oriented industries, tariff has been capped @ US cent 7.5/ unit.

### Advanced Metering Infrastructure (AMI)

The project of Advanced Metering Infrastructure (AMI) is being launched in LESCO and IESCO areas to overcome the problems highlighted above. Asian Development Bank has committed to provide \$ 400 Million for this first phase of the project. LESCO BOD has already approved the project and it is under process.

#### ➤ LESCO

The scope of project involves deployment of 1.8 million AMI meters in Northern, Central and Southern circles of LESCO. The total cost of the project is 300 Million USD.

Project implementation consultant have been hired while the bids are already in process of their completion. The project will soon be awarded for its execution.

#### IESCO

Under ADB Loan-3328, the same AMI project is also conceived and being implemented in IESCO regions. The process of hiring of consultant and bidding has already started. Within a span of few months the project will be put to execution.

### Aerial Bundled Cable (ABC)

Aerial Bundled Cable (ABC) can control and pre-empt illegal connections through direct hooking which can in turn help in controlling the menace of *kundas* and reducing line losses in high losses areas. Power Division has planned to install ABC in PESCO and SEPCO areas

in the first phase and the same will be rolled out in remaining DISCOs targeting high loss feeders.

➤ **PESCO**

• **Project Objectives**

The installation of ABC cables in hard areas would minimize the theft of electricity on these 11 kV feeders and will save PESCO from further loss and its benefits would overshadow its cost.

The most chronic and hard 11 kV feeders of Peshawar, Khyber and Bannu Circle having high unit losses are selected for installation of ABC. The use of electricity through direct hooks in the hard area is due to law and order situation and the number of running and dead defaulters are also very high with huge unrecoverable amount in these areas. The use of force had been futile in the past and the best strategy is to eliminate the source of direct hooks that can be achieved by replacing the bare LT line with ABC cable in order to compel the people to come back to the billing cycle either through new connections or RCO.

The installation of ABC cables in hard areas would minimize the theft of electricity on these 11 kV feeders and will save PESCO from further loss.

• **Scope**

Peshawar Circle = 956 km, Khyber Circle = 621 km, Bannu Circle = 1424 km

Total Length = 3001 km

• **Benefits of the Project**

Units saving = 500 MkWH

• **Total Estimated Cost**

Total Cost = Rs 2250 Million



**Performance of**

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

## **13(II) PERFORMANCE OF NATIONAL TRANSMISSION AND DESPATCH COMPANY (NTDC)**

### **Corporate Status**

- After unbundling of WAPDA, NTDC was incorporated as a Public Limited Company in Nov 06, 1998 under the Companies Ordinance 1984 (now Companies Act 2017), with its Head Office at Lahore. After having Certificate for Commencement of Business, NTDC started its commercial operations from March 01, 1999.
- NEPRA granted Transmission License to NTDC in December 2002 to engage in the exclusive transmission business for a term of thirty (30) years.
- The paid-up/share Capital of the Company is Rs. 52.7 Billion (5.27 Billion ordinary shares of Rs. 10 each). GoP owns 88% shares whereas employee owns 12%.
- NTDC 1<sup>st</sup> tariff was determinate by NEPRA in April, 2004.

### **Vision Statement**

To be the Business Role Model for the Public Sector in Pakistan through its excellent Transmission & Despatch, backing the economic growth in the country.

### **Mission Statement**

To provide Pakistan with reliable, efficient, and stable transmission network and Despatch Services through the adoption of sustainable best international practices that ensure optimum utilization of resources to meet the transmission services requirements of generators and end users, maximize return to stakeholders and provide a rewarding workplace for the employees.

### **NTDC Of Tomorrow**

NTDC aims to be the best Transmission Company while adopting best utility practices, ensuring Transmission System Reliability & Safety and committed to become the Best Service Provider to the Power Producers, Distribution Companies and bulk power consumers connected to its Network. Intend to achieve by acquiring new technologies including 765kV AC,  $\pm 660$  kV DC & import of power from neighboring countries.

### **NTDC Core Functions**

National Transmission and Despatch Company (NTDC) links Power Generation Units with Load Centers spread all over the country (including Karachi) and thus establishes and governs one of the largest interconnected Networks.

The Company is responsible for evacuation of Power from the Hydroelectric Power Plants (mainly in the North), the Thermal Units of Public (GENCOs) and Private Sectors (IPPs) (mainly in the South) to the Power Distribution Companies through primary (EHV) Network.

- Transmission Network Operator (TNO)
- System Operator (SO)
- Wire Business

System Operation & Despatch

#### NTDC Transmission System Information Summary

Description	500 kV		220kV		Generation Addition (MW)
	No. of Grid Station	MVA Capacity	No. of Grid Station	MVA Capacity	
Existing Installed Capacity	16	22350	45	31240	35556
FY 2019-20	0	1050	0	0	1741
FY 2020-21	0	1050	1	6846	2681
FY 2021-22	3	3900	3	3890	6734
FY 2022-23	2	3750	12	7870	3980
FY 2023-24	1	1950	3	2250	3786
FY 2024-25	2	3750	1	500	1841
<b>Total</b>	<b>24</b>	<b>37800</b>	<b>65</b>	<b>52596</b>	<b>55037</b>

#### **Summary of Completed Projects, Activities and Achievements during 2018-19**

##### **Projects**

NTDC completed total 31 projects of grid stations, transmission lines and augmentation. One 500 kV Switching Station, Three 220 kV grid stations, whereas 691 km 500 kV transmission lines, over 300 km 220 kV transmission lines and 46 km 132 kV transmission lines were constructed / completed during 2018-19 across the country.

NTDC transmitted a record 23,500 MW of electricity through its system first time in the history of Pakistan. This record transmission of power is the result of completion of grid stations, transmission lines and augmentation work carried out by NTDC during 2018-19. NTDC has carried out various improvement schemes during FY2018-19 to overcome constraints in its transmission networks. These schemes included rehabilitations/augmentation at 500kV Port Qasim transmission line to 500 kV NKI grid station and Jamshoro circuits for evacuation of maximum power from Port Qasim Power Plant.

In order to mitigate the overloading and trippings issues in the NTDC system, augmentation of Transformer at 220 kV T.T Singh Grid Station (1x250 MVA), Augmentation of Transformer at 220 kV Ludewala Grid Station (3x250 MVA), Augmentation of Transformer at 220 kV Vehari Grid Station (3x250 MVA), Extension Works / Addition of 750 MVA at 500 kV Rawat Grid Station, Augmentation of Transformer at 220 kV Samundri Road Grid Station (1x250 MVA), Augmentation of Transformer at 220 kV Quetta Industrial Grid Station (3x250 MVA), Augmentation of Transformer at 500 kV Shikarpur Grid Station (3x250 MVA), Augmentation of Transformer at 220 kV Sarfaraz Nagar Grid Station and Augmentation of Transformer at 500 kV Gatti Grid Station (3x200 MVA) and Extension works at 500 kV Rahim Yar Khan G/S along with Shunt Reactor were completed during 2018-19. All these projects have helped power system enhancement for smooth supply to end consumers especially during the holy month of Ramdan.

Pollution and humidity in southern parts of the country was always a big challenge for NTDC to transmit smooth power supply which has been overcome by RTV Coating on Disc Insulators and De-stringing/Re-stringing (replacement) of Existing Insulators with RTV Coated Insulators on 500 kV Port-Qasim-Jamhsoro Transmission Line and 220 kV Jhimpir-T.M. Khan Road Transmission lines.

Under the Transmission Expansion Plan 2019-20 to 2024-25, 61 projects worth billions of rupees were planned for construction throughout the country. Out of these projects 23 projects of grid stations, transmission lines and system augmentation/ extension are expected to be completed during 2019-20.

NTDC has prepared and submitted Indicative Generation Capacity Expansion Plan (IGCEP) 2018-40 of Pakistan to NEPRA, the electricity regulator. The IGCEP has been developed by Power System Planning department of NTDC pursuant to the mandatory regulatory obligations under the NEPRA Grid Code 2005 which is a momentous achievement for the entire Power Sector of Pakistan. The IGCEP is long term and least cost generation capacity expansion plan.

During the year NTDC has also completed the installation of Training Simulator at Technical Services Group (TSG) Lahore which is one of the land mark contribution by JICA with the cost of Rs ONE Billion. This unique project was direly needed for capacity building of power sector engineers. This state of the art facility will provide training opportunities to the employees of NTDC and other Distribution Companies of power sector. Training on simulator will bring improvements in operation and maintenance of grid stations.

### **Achievements through Administrative Management**

In line with austerity measures implemented by Prime Minister of Pakistan, NTDC Management made a huge headway in streamlining its systems as well as cutting overblown expenses by undergoing digital transformation and successfully introduced tools for cost cutting and transparency on top of improving processes at managerial levels as well as simplifying complicated tasks, saving millions of rupees annually.

The procedure for purchase of fuel for vehicles has been revamped and company switched over to electronic Fleet Card System. As many as 957 cards have been dispersed to various NTDC formations, which resulted in saving of Rs70 million during fiscal year 2019-20, keeping in view the current fuel price. Moreover, the NTDC has developed and

implemented Vehicle Management System (VMS) for maintaining online record of all the NTDC vehicles in order to monitor use of public expenditures judiciously.

Due to scarcity of space in WAPDA House, seven NTDC offices along with allied sections have been shifted to Shaheen Complex, Lahore, to adopt corporate style working. This is expected to save Rs22 million annually. On top of saving a neat and clean environment has also been provided to the workforce and supervision of senior/middle management has increased their efficiency remarkably.

For BPS-17 and above employees, the company has also successfully implemented the automated Performance Evaluation system, which ensures the timely submission and updation of Annual Confidential Reports (ACRs) and Performance Evaluation Reports.

A state-of-the-art Human Resource Information System has been launched to achieve the data's accuracy and reliability for successful usage of Promotion Management System Software.

### **NTDC FINANCIAL POSITION ENDING JUNE, 2019**

NTDC has capitalized projects of Rs 72 billion and the company is expected to earn net profit (before tax) of over Rs 14 billion.

<b>Sr. No.</b>	<b>Project Description</b>	<b>Completion Date</b>
<b>JULY 2018</b>		
11.	132kV Transmission Line for evacuation of Power from 50MW Tricon Boston A,B & C Wind Power Plants (23.08 km)	12 & 13 & 20 Jul 2018
12.	500 kV Thar-Matiari Transmission Line (247 km)	31 Jul 2018
<b>AUGUST 2018</b>		
13.	Interconnection scheme of 1230 MW RLNG based power plant project at Trimmu 220 kV D/C T/L on twin-bundle Rail conductor from the project to 220 kV T.T.Singh (Line-I, 46.5 km)	11 Aug 2018
<b>SEPTEMBER 2018</b>		
14.	220 kV Chakdara Grid Station (2x250 MVA)	16 Sep 2018
15.	220 kV Transmission Line for Chakdara Grid Station (70 km)	16 Sep 2018
16.	500kV T/Line Interconnection With Existing Hub-Jamshoro S/C T/Line for evacuation of power from 1320MW HUB Power Plant (0.86km)	18 Sep 2018
<b>OCTOBER 2018</b>		
17.	500kV Shunt Reactor at Jamshoro Grid Station	20 Oct 2018

## DECEMBER 2018

18. 220 kV D/C T/L feed for Nowshera IN & OUT of 220 kV Ghazi Barotha-ShahiBagh T/L (8.59 km) 18 Dec 2018

## JANUARY 2019

19. 132 kV Transmission Line Interconnection for 50 MW Zephyr Wind Power Plant (4.5 km) 09.01.2019
20. Augmentation of Transformer at 220KV T.T Singh Grid Station (1x250 MVA) 15.01.2019
21. 220 / 132KV Ghazi Road G/S 16.01.2019
22. 500 kV 3<sup>rd</sup> Circuit Transmission Line (Jamshoro – Moro Section) 24.01.2019

## FEBRUARY 2019

23. 220 kV D.I. Khan G/S 18.02.2019
24. 220 kV T/L for grid stations of D.I. Khan AND Lalian (Chashma -D.I. Khan Section) 18.02.2019
25. 132 kV D/C Transmission Line to connect Tenaga WPP to HydroChina WPP by connecting with 220 kV Gharo – Jhampir Transmission Line (Lot-I & II) 22, 23 Feb, 2019
26. Re-conductoring of 220 kV TarbelaBurhan T/L 28.02.2019

## MARCH 2019

27. Augmentation of Transformer at 220 kV Ludewala Grid Station (3x250 MVA) 21.03.2019
28. Augmentation of Transformer at 220 kV Vehari Grid Station (3x250 MVA) 27.03.2019
29. 500kV Transmission Line 3rd Jamshoro – Moro Section (202km) 29.03.2019
30. 500kV Transmission Line 3rd Moro – Dadu Section (54.6km) 29.03.2019
31. 500 kV Moro Switching Station 29.03.2019

## APRIL 2019

32. Extension Works / Addition of 750 MVA at 500 kV Rawat G/S 05.04.2019
33. Augmentation of Transformer at 220 kV Samundri Road Grid Station (1x250 MVA) 09.04.2019

34.	RTV Coating on Disc Insulators and De-stringing / Re-stringing (replacement) of Existing Insulators with RTV Coated Insulators on 500 kV Port-Qasim-Jamshoro T/L and 220 kV Jhampir-T.M. Khan Road T/L	19.04.2019 (Port Qasim-Jamshoro T/L)  15.02.2019 (Jhampir-T.M. Khan T/L)
35.	500kV D/C Transmission Line Port Qasim – Matiari (Phase-II) Lot-I: 49.15km , Lot-II: 27.54km	20.04.2019
36.	220/132 kV Nowshera G/S	20.04.2019
37.	Augmentation of Transformer at 220 kV Quetta Industrial G/S (3x250 MVA)	22.04.2019
38.	220 kV D/C Twin Bundled NKLP-WAPDA Town T/L through IN/OUT arrangement at New Lahore South G/S (Lot-IIB)	26.04.2019
39.	Augmentation of Transformer at 500 kV Shikarpur G/S (3x250 MVA)	29.04.2019
40.	Augmentation of Transformer at 220 kV Sarfaraz Nagar G/S	30.04.2019

**MAY 2019**

41.	Extension works at 500 kV Rahim Yar Khan G/S along with Shunt Reactor	02.05.2019
42.	500 kV 3 <sup>rd</sup> Circuit Transmission Line (Goth KaziMahar – Rahim Yar Khan Section) (163.5 km)	22.05.2019
43.	Augmentation of Transformer at 500 kV Gatti G/S (3x200 MVA)	29.05.2019

**NTDC Transmission Expansion Plan  
(2019-20 to 2024-25)**

Sr. No.	Name of the Project	Scope of Work MVA Capacity	T/L (km)	PC-I Approval Date	Estimated Cost (MRs.)	Expected Completi on
1	3rd 500 kV Circuit from Jamshoro to Rahim Yar Khan	-	600	26.08.2013	36,857	2019-20
2	969 MW Neelum Jhelum HPP	-	130km	02.03.2015	21,697	2019-20

(Phase-II)						
3	1320 MW Imported Coal Power Plant at HUBCO (Phase-II)	-	220 km	02.03.2015	16,415	2019-20
4	1320 MW Imported CFPP at Sahiwal (Addition of ATB)	1x600	-	31.08.2015	1,115	2019-20
5	500kV D/C T/L from Guddu-uzzafargarh (747 MW Guddu)	-	276	29.07.2011	7,856	2019-20
6	147 MW Patrind HPP (Phase-II)	-	70 (132kV)	27.1.2015	966	2019-20
7	Extension work at 500kV Jamshoro G/S	1x450	-	03.07.2014	1,050	2019-20
8	1320 MW Bin Qasim Plant (Phase-II)	-	130	13.05.2015	12,977	2019-20
9	Pilot Battery Energy Storage System (BESS) at 220kV Jhampir-I	-	-	24-05.2018	940	2019-20
10	Extension/Augmentation at Existing Grid Stations (28 nos. Grid Stations)	1050 (500kV) 6096 (220kV)	-	12.04.2017	16,526	2020-21
11	Conversion of Four 220kV Grids from AIS to GIS	-	-	07.03.2017	5,684	2020-21
12	220kV Lalian New G/S	3x250	8	11.11.2011	1,581	2020-21



13	Improvement of Protection System to Avoid the Frequent Trippings in South Areas	-	-	08.06.2016	887	2020-21
14	Evacuation of Power from 330 MW Siddiqsons Ltd.	-	21	PC-I submitted on 10.06.2019	2177	2020-21
15	Evacuation of Power from 660 MW Lucky Electric Power Company	-	13	PC-I submitted on 27-05- 2019	1226	2020-21
16	500 kV Faisalabad West Grid Station	2x750 + 3x250	125 km (220 kV) 32 km (500 kV)	12.01.2015	9380	2021-22
17	500 kV HVAC T/L for Interconnection of HVDC Converter Station at Lahore & Matiari with HVAC System	-	60	07.11.2016	4806	2021-22
18	500kV Chakwal G/S	2x450 + 4x160	33	12.04.2017	6710	2021-22
19	Evacuation of Power from Karot and Azad Pattan HPPs	-	10	02.03.2015	525	2021-22
20	220kV Zero Point G/S	3x250	24	19.09.2017	2541	2021-22
21	Enterprise Resource Planning System. (ERP)	-	-	19-03-2018	2,583	2021-22

22	Evacuation of Power from SukiKinari, Kohala and Mahal Hydro Power Projects	-	<u>500kV</u> 697	14-11- 2018	79,929	2021-22
23	Evacuation of Power from 2x660 MW Coal Based (SSRL)/ (SECL) Power Plant at Thar	-	275 (500kV)	12.04.2017	21,783	2021-22
24	Enterprise Resource Planning System. (ERP)	-	-	19-03-2018	2,583	2021-22
25	220kV Gharo G/S	2x250	85 km (220kV) 20 km (132kV)	03.07.2014	5445	2021-22
26	Evacuation of Power from 1224MW Wind Power Plants at Jhimpir Clusters	1250	35 km (220kV) 220 km (132kV)	24-11-2017	10753	2021-22
27	Evacuation of Power from K2/K3 Nuclear Power Plants	-	116	12.04.2017	7501	2021-22
28	Interconnection Scheme for CASA-1000 (HVDC Part)	-	<u>HVDC</u> 110 km	Recommended by CDWP on 07.05.2015	41,146	2021-22
29	500 kV Nowshera Grid Station, CASA-1000	2x750	17km (500kV) 2km (220 kV)	07.05.2015 (CDWP)	12,634	2021-22
30	Procurement of	-	-	Approved	6979	2021-22

	220kV Mobile Grid Stations along with emergency recovery systems			by CDWP on 17.10.2019		
31	2 <sup>nd</sup> Source of Supply to 220 kV Jaranwala Road Grid Station	-	95 (220 kV)	Submitted to MoE on 22-04-2019	5787	2021-22
32	220 kV Zhob G/S	2x160	22	07.11.2016	6878	2022-23
33	220kV MirpurKhas G/S	2x250	70	07.11.2016	3857	2022-23
34	New 220kV Guddu-Uch- Sibbi S/C TL	-	360	24-11-2017	8624	2022-23
35	Evacuation of Power from Tarbela 5 <sup>th</sup> Extension	-	53	24-11-2017	4140	2022-23
36	220kV Punjab University	3x250	4	19-09-2017	2948	2022-23
37	500 kV Lahore North	3x750 3x250	150 km (500 kV) 44km (220 kV)	24-11-2017	20732	2022-23
38	220kV Mastung G/S	2x250	120	22.05.2018	14,155	2022-23
39	500 kV Islamabad West G/S	2x750 + 3x250	35 km (220 kV) 27km (500 kV)	20.07.2016	8,288	2022-23
40	220kV Larkana Grid Station	3x250	65	Approved by CDWP on 17.10.2019	6,449	2022-23

41	Upgradation/Extension of NTDC's Telecom & SCADA System	-	-	07-03-2018	11,410	2022-23
42	220kV Head Faqirian	2x160	88	15.07.2019	6,055	2022-23
43	220kV Jauharabad	3x160	12	02-05-2018	2,961	2022-23
44	220kV Dharki-Rahimyar khan-Bahawalpur D/C T/L	-	335	Approved by ECNEC on 02.10.2019	15,796	2022-23
45	220kV Jamrud G/S	2x250	20	19-10-2017	2,398	2022-23
46	220 kV Nawabshah	3x250	65	Approved by CDWP on 17.10.2019	6,292	2022-23
47	220kV Swabi Substation	2x250	10 (220kV)	Approved by CDWP on 17.10.2019	6,399	2022-23
48	220 kV Gujranwala-II	2x250	110	Submitted to MoE on 29.06.2019	7,564	2022-23
49	220kV Kohat G/S	2x250	67	Submitted to MoE on 26.06.2019	5,593	2022-23
50	220kV Haripur Substation	2x250	60 (220kV)	Submitted to PC on 09.10.2019	3,335	2022-23
51	220kV Kamra G/S	2x250	8	Submitted to MoE on	2,971	2023-24

				29.06.2019		
52	500kV Moro Grid Station	2x750 + 3x250	-	Recommended by CDWP on 06-05-2019	6,331	2023-24
53	Extension at 500kV New Multan	1x450	-	Under Preparation	2000	2023-24
54	220 kV Arifwala	2x250	50	Submitted to MoE on 29.06.2019	4,900	2023-24
55	Evacuation of Power from 2160 MW Dasu Hydro Power Project (Phase-I)	-	<u>765kV</u> 250	15.07.2019	80,591	2023-24
56	500kV Quetta Grid Station along with 500 kV Quetta- D.G Khan T/L	2x750	<u>350 km</u> (500 kV)	Concept paper cleared On 02-05-2018	30000	2024-25
57	220kV Khuzdar - Gawadar T/L along with associated 220 kV G/S	2x250	<u>670 km</u> (220 kV)	Concept paper cleared On 02-05-2018	35625	2024-25
58	Installation of SVCs at different Grid stations of NTDC system	-	-	Under Study	17500	2024-25
59	Installation of series Compensation for Enhancement in Transmission	-	-	Under Study	37500	2024-25

## Capacity

60	Rehabilitation of existing Grid Stations and Transmission Lines of NTDC system	-	-	Under Study	37500	2024-25
61	500/220kV Sialkot Grid Station	3x750	30 km (500 kV) 20km (220kV)	Submitted to PC on 29.10.2019	11,657	2024-25

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## **Performance of**

# **NATIONAL ENERGY EFFICIENCY & CONSERVATION AUTHORITY (NEECA)**

### **13(III) PERFORMANCE of NATIONAL ENERGY EFFICIENCY & CONSERVATION AUTHORITY (NEECA)**

In view of achieving the large potential of energy conservation and efficient use of energy in the country, the National Energy Efficiency and Conservation Act 2016 was passed by the Parliament in July 2016. The legislation has provided a legal basis to enforce necessary measures for efficient use and conservation of energy in the country in all sectors of the economy. In accordance with the provisions of the National Energy Efficiency & Conservation Act, 2016, the restructuring of the National Energy Efficiency and Conservation Authority is under process. The first meeting of the Board of Directors (BoD) of National Energy Efficiency & Conservation Authority (NEECA) was held on 9<sup>th</sup> August, 2018. Following is the main activities undertaken to conserve energy and to promote its efficient use in the country:

#### **i. Energy Efficiency Standards and Labeling Scheme:**

Energy Efficiency Standard & Labeling (EES&L) programs have been successfully implemented in many countries, bringing significant impacts in terms of availability of higher quality energy efficient products in the market and subsequent reduction in energy consumption. NEECA is closely working with various key stakeholders i.e. Ministry of Science & Technology, and manufacturers of various appliances and development partners which has formed the basis for launch of first Energy Labeling Scheme in the country in July, 2016. Presently, and sixteen fan manufacturers with a total of 27 models have qualified for 3-Star Pakistan Energy Labels. 3,27,500 security stickers were issued against various make/models of electric fans. The installation and operation of all these labeled fans at a time at maximum speed have resulted in reducing/suppressing connected load demand of 6 - 9 Megawatts at the user side which in fact would have suppressed 20-25 Megawatts of power demand at the generation side. The scheme was promoted by all the Electricity Distribution Companies through promotional ad at the backside of the utility bills. The scheme helped in development of accredited labs of LED lights and Refrigerators at PCSIR laboratories complex in Lahore. Further meetings were held with AC and Refrigerator manufacturers to finalize the Minimum Energy Performance Standards for adoption by PSQCA. International experts from UN United for Efficiency have also extended support in reviewing of the technical specifications of the AC Lab which is being planned to be established in Lahore through Punjab Energy Efficiency & Conservation Agency (PEECA) which is one of NEECA's designated agency. Market



Survey for LED lights, motors and pumps are being carried out. The DC fans performance optimization was also focused and development partners may start using such fans in their upcoming off-grid programs. CLASP is also assisting NEECA in development of Standards for Motors.

## **ii. NEECA support to Provincial Designated Agencies**

As per the provisions of the NEECA Act, 2016 the Provincial Governments have nominated their respective departments to assist NEECA as an implementation arm in the respective Provinces, such as Punjab Energy Efficiency & Conservation Agency in Punjab, Power Development Cell- Sindh Energy Department, Pakhtunkhwa Energy Development Organization in Khyber-Pakhtunkhwa and Energy Department in Balochistan. NEECA carried out stakeholder consultative meetings and assisted the Provincial agencies to help and establish/improve the programs/projects to supplement the NEECA initiatives.

## **iii. Energy Efficient Public Buildings and Green Procurement Program**

Green public procurement is a policy adopted by many countries. Initiative has been taken in Pakistan with key stakeholders under the Prime Minister's Directives to ensure that all new public buildings to be constructed are energy efficient by incorporating provisions for procurement of energy efficient products and to design all new public buildings, keeping in view the national and international best practices for energy efficiency in building sector in the relevant sections of PC-1 and PC-II forms. A project for replacement of inefficient appliances being used in Public buildings with energy efficient ones has been developed and submitted for consideration by the GEF National Steering Committee of Ministry of Climate Change.

## **iv. Energy Conservation Building Codes**

Various sessions were held on Building Codes (Energy Provisions-2011) and its modifications required for implementation in Punjab. USAID through local and international consultant is assisting NEECA to develop the compliance handbook of the codes. As the code is developed on the basis of American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard, the ASHRAE showed willingness to modify the codes and help establish the compliance mechanism for NEECA and its Provincial Designated Agencies. Punjab Energy Efficiency & Conservation Agency (PEECA) on the basis of the initial Building Code has modified the code and has started its capacity building program with NEECA's support.

## **v. Energy Audits of Industries, Buildings & Brick Kilns**

The issue of energy consumption has been a growing interest across all industry sectors not only because of its immediate impact on production costs but also because of its considerable impact on environmental sustainability. Energy Audits of five Industries and a public building on cost sharing basis were conducted by the qualified consulting/energy auditing firms which have outlined a clear action plan to address all the requirements for the facility to implement the energy conservation recommendations, including priorities, procedures, costs and schedule. During the conduct of aforementioned energy audits, the technical representatives of the respective industries and buildings were also trained. More than 50% Electricity bill reduction was seen in post implementation of energy audit recommendation in A-Block Pak Secretariat Building. A diverse range of industries have already experienced improved energy and production efficiency, following energy audits conducted under this program. All Provincial specific departments and CDA/Pak PWD at the Federal level have been requested to develop a list of energy intensive public buildings with the number of appliances installed for developing large scale appliance replacement program. The post energy audit implementation of a measure at A-Block of Pak Secretariat has resulted in 70-80 percent reduction in electric energy consumption and further audits would be conducted in consultation with Capital Development Authority.

Energy Audit and subsequent design improvement of one of the brick kilns with the technical assistance from the consultant/trainer of International Centre for Integrated Mountain Development (ICIMOD), Nepal has resulted in energy savings of up to 40% fuel reduction and emission reduction up to 70%. Onsite training on Energy Efficient brick kiln was given to about 3000 brick kiln owners from different regions of Pakistan. Many owners have started modifying their brick kilns now for which further technical support is being given by the NEECA. About 500 energy efficient Zig-Zag Kilns have been constructed so far and many are under construction. The manual for operations of ZigZag kilns was translated and disseminated together with all stakeholders among the members of All Pakistan Brick Kilns Owners Association.

#### **vi. Awareness Sessions**

Awareness sessions for energy conservation are being carried out on regular basis in various chambers of commerce and industries, universities across Pakistan and in different universities and schools. Energy saving messages are also being disseminated through electronic/print media and utility bills. The Ministry also launched an effective campaign in the print and electronic media to highlight the importance of energy efficiency and conservation.

**vii. International Projects:**

The National Energy Efficiency & Conservation Authority (NEECA) has firmed up various initiatives in coordination with different international organizations / donor agencies. A list of various programs launch last year and being implemented are specified below:

- i. UNEP-GEF Funded Energy Efficient Lighting Project.
- ii. National Certification Scheme For Energy Auditors, UNEP
- iii. EU-Switch Asia Programme Implementation of Resource and Energy Efficient Technologies in the Sugar Sector of Pakistan.
- iv. JICA Technical Cooperation for Energy Labeling Regime for Phasing our inefficient appliances and actual load profiling of homes in different provinces.
- v. kfW Green Procurement Program to make Public Buildings Energy Efficient.
- vi. Energy Efficient Brick Kilns, International Centre for Integrated Mountain Development, Nepal.
- vii. Sustainable Energy Efficiency Initiative for Industries, UNIDO.
- viii. Miscellaneous

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**Performance of**

**ALTERNATIVE ENERGY DEVELOPMENT  
BOARD (AEDB)**

### **13(IV) PERFORMANCE of ALTERNATIVE ENERGY DEVELOPMENT BOARD (AEDB)**

Alternative Energy Development Board (AEDB) has been promoting and facilitating the development and deployment of alternative and renewable energy technologies in the country. The development of renewable energy based power generation projects is being pursued on IPP mode through private sector investors. The status of RE power projects as of 30<sup>th</sup> June, 2019 is given below:

- Twenty Four (24) wind power projects of 1233.37 MW cumulative capacity were operational and providing electricity to the grid.
- Six (06) solar projects of 430 MW cumulative capacity were operational.
- Eight (08) sugar mill based bagasse co-generation projects of 259.1 MW capacity were operational. One project of 74.4 MW capacity was under construction.

#### **Steps & Measures Taken by AEDB for Promotion And Development of Renewable Energy**

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

- i. AEDB proactively facilitated the RE power projects in achieving their project milestones and resolution of issues and impediments faced by the project sponsors from different public sector entities.
- ii. AEDB initiated the formulation of the new draft ARE Policy 2019 as per the directions of the Government targeting a share of 20% from RE resources in the power mix by 2025% and 30% by 2030.
- iii. AEDB prepared the draft RFP for carrying out competitive bidding for development of wind and solar power projects falling under category-III of CCoE in case No. CCE-12/04/2019(V).
- iv. AEDB promoted the net metering concept and facilitated the concerned stakeholders in implementation Net Metering systems under NEPRA's regulations. For mass deployment of net metering based systems, several supportive steps were taken including simplifying the process of acquiring generation license and other approvals / permissions and shortening the time period required for the same by proposing revisions in NEPRA's Net Metering Regulations. During 2018-19, 1,458 solar net metering systems for 25.318 MW capacity were installed. The total number of installations reached up to 1,917 by 30<sup>th</sup> June, 2018 with a cumulative capacity of 35.582 MW.
- v. AEDB, with the support of GIZ, finalized the mechanism for implementation of quality standards for import of solar PV equipment in Pakistan which was made part of the IPO.

- vi. Analysis of IESCO grid network for net metering was carried out through the support of GIZ.
- vii. AEDB interacted with State Bank of Pakistan for revision and extension of SBP's Financing Scheme for Renewable Energy. The financing scheme has been extended till 30<sup>th</sup> June, 2022.
- viii. AEDB in collaboration with GIZ launched Solar Quality Passport (SQP) program on 24<sup>th</sup> April, 2019 which has been designed to provide system owners with confidence that the installers who issue the passport will act in compliance with all applicable national policies, regulations and standards.
- ix. AEDB continued assistance in implementation of IFC Lighting Pakistan program. A total of 170,000 products had been sold in rural areas benefitting 850,000 people.
- x. AEDB collaborated with UNIDO for implementation of program to demonstrate utilization of biomass resource in industries for generation of electricity. A 5.6 MW biomass pilot project was initiated in industries under the program.
- xi. AEDB and UNIDO continued collaboration under a program to develop human resource and demonstrate utilization of renewable energy applications in different industries. Dedicated trainings were undertaken by engagement of international consultants for certified energy managers, certified energy auditors and energy management systems.

### **Progress Of Are Power Projects During 2018-19**

#### **i. WIND**

Wind power project developers / IPPs have been facilitated for completion of their respective projects. Five (05) wind power projects of 246.6 MW capacity were completed and achieved COD.

#### **ii. BIOMASS / BAGASSE**

Two (02) bagasse based power generation projects of 58 MW capacity were completed achieved COD and started supplying electricity to the National Grid.

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**Performance of**

**PRIVATE POWER AND  
INFRASTRUCTURE BOARD (PPIB)**

### **13(V) PERFORMANCE OF PRIVATE POWER AND INFRASTRUCTURE BOARD (PPIB)**

Private Power and Infrastructure Board (PPIB) is a ‘One Window’ facilitator for the investors in the field of power generation on behalf of Government of Pakistan (GoP). PPIB is also processing public sector power generation projects in IPP model for providing incentives, concessions and facilitation by PPIB to these projects companies under the applicable policies as being provided to the IPPs in the private sector. Brief material comprising PPIB’s major achievements/activities, future plans/targets etc. in the field of power generation for preparation of Year Book 2018-19 is as follows:

#### **(A) Highlights of some major activities/achievements of PPIB during 2018-19:**

- i. 1,223 MW RLNG based Balloki Power Project achieved Commercial Operations Date (COD) on 29<sup>th</sup> July 2018 and started supplying electricity to the national grid.
- ii. First unit (330 MW) of Pakistan and also CPEC’s thar coal based 660 MW Engro Power gen project synchronized on 18<sup>th</sup> March 2019 which has paved the completion of full project of 660 MW by July 2019.
- iii. Another CPEC based project achieved a critical milestone during 2018-19. First unit (660 MW) of imported coal based China Power Hub Generation Project Another coal based power project synchronized on 29<sup>th</sup> December 2018 while full project (1,320 MW) scheduled to come online by August 2019.
- iv. Transmission Lines sector also witnessed remarkable progress in 2018-19. PPIB is processing Pakistan’s first private sector transmission line project which would also be the first HVDC equipped project of the country. The 900 km long  $\pm 660$ kV Matiari-Lahore Transmission Line Project achieved Financial Closing on 27<sup>th</sup> February 2019. With this achievement, this project has entered in construction phase which is targeted to be concluded by March 2021.
- v. 720 MW Karot Hydropower Project achieved a major milestone when construction work on embankment/dam reservoir was started by diverting water flow from River Jhelum on 22.09.2018. In this regard a formal ceremony was held at Project Site which was graced by Senator Shibli Faraz, Leader of the House in Senate beside dignitaries from China.
- vi. Besides, during 2018-19 remained actively engaged in facilitating projects sponsors in conducting feasibility studies, land acquisition, NEPRA’s generation licenses as well as tariff approvals and execution of IA, PPA, DIA, WUA and SIA agreements. In this regard, highlights of success achieved by PPIB is as follows:



- vii. GOP-IA for development of 700 MW Azad Pattan Hydropower Project was initiated on 20.11.2018 while AJ&K-IA was initiated on 22.02.2019.
- viii. Tri-partite Power Purchase Agreement was initiated on 24.09.2018 for development of 1,124 MW Kohala Hydropower Project.
- ix. Feasibility Study for development of Turtonas-Uzghor Hydropower Project was approved on 03.06.2019, as a result project capacity has been increased from 58 MW to 82 MW.
- x. Feasibility Study for Ath muqam Hydropower Project is also final and expected to be approved within July 2019. It is anticipated that the capacity of this project will also be increased from 350 MW to 450 MW.
- xi. Feasibility Study Stage Tariff for 640 MW Mahl Hydropower Project was announced by NEPRA on 23.01.2019
- xii. Coal Supply Agreement for 330 MW Siddiq sons Thar Coal based Power Project was signed on 12.02.2019.
- xiii. NERPA announced Tariff for 300 MW Imported Coal based Power Project on 19.12.2018. However, Sponsors filed Tariff Review Petition, and tariff was re-determined on 21.05.2019.

**(B) Major activities/proposals to be undertaken by PPIB in future**

PPIB is targeting to complete and commission twelve IPPs of more than 7,500 MW by 2022 under to aim to supply reliable, affordable and sustainable electricity to the national grid. Majority of these projects are under construction or under financial closing stage hence anticipated to start construction in near future.

<b>Year</b>	<b>Hydro (MW)</b>	<b>Thar Coal (MW)</b>	<b>Imported Coal (MW)</b>	<b>RLNG (MW)</b>	<b>Total (MW)</b>
<b>2019</b>	102	660	1,320	800	<b>2,882</b>
<b>2020</b>	-	-	-	463	<b>463</b>
<b>2021</b>	720	1,320	-	-	<b>2,040</b>
<b>2022</b>	870	990	300	-	<b>2,160</b>
<b>Grand Total</b>	<b>1,692</b>	<b>2,970</b>	<b>1,620</b>	<b>1,263</b>	<b>7,545</b>

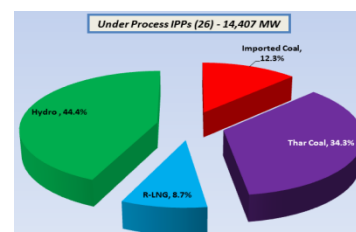
- i. In order to improve the share of hydropower in the overall energy mix of country, PPIB is planning to advertise new hydro based IPPs under International Competitive Bidding (ICB) mode in accordance with the demand-supply study/IGECP so that there is no situation of deficit or excess generation in the country.
- ii. To remove the major bottleneck in the development of power projects in the private sector through Provinces and AJ&K, particularly the small hydro projects that have been issued Letters of Interest (LOI) by Provinces and AJ&K are referred to PPIB for

subsequent handling under Tripartite Letter of Support (TLOS) regime as envisaged under Power Generation Policy 2015. In this regard, PPIB has started proceeding on the matter in accordance with the approval of Board, accordingly, issuance of TLOS to 7.08 MW Riali-II Hydropower Project is expected soon.

- iii. In addition to Matiari-Lahore Transmission Line Project, another HVDC Transmission Line Project is expected to be processed by PPIB under CPEC. Furthermore, NTDC has also recently referred few transmission line projects to PPIB for ICB. PPIB will gear-up its efforts for improving Transmission system in the coming years.
- iv. Indigenous resources are being highly encouraged for future power generation, and Thar coal will be utilized for future power projects as per requirements of the national grid.

**(C) PPIB'S CURRENT PORTFOLIO OF NEW POWER PROJECTS**

Currently PPIB is handling portfolio of Twenty Six (26) new multiple fuel (coal, hydro, R-LNG) based IPPs with cumulative capacity of around 14,407MW worth multi billion dollars. These projects are at different stages of implementation. Break-up is as follows:

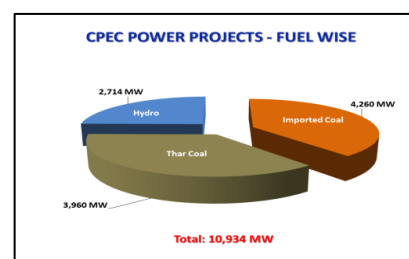


- Seven (7) Thar Coal based Projects = 4,950 MW
- Fifteen (15) Hydro based Projects = 6,411 MW
- Three (3) Imported Coal based Projects = 1,783 MW
- One (1) RLNG based Project = 1,263 MW
- One (1) Transmission Line Project (Matiari-Lahore) having 4,000 MW Load carrying capacity.

**(D) ROLE OF PPIB IN IMPLEMENTING POWER PROJECTS UNDER**

**CHINA PAKISTAN ECONOMIC CORRIDOR (CPEC) PROGRAM**

PPIB is acting as Front line Institution of Government in Implementing Flagship CPEC Program by processing major chunk of Power Sector's projects. PPIB's Current Portfolio Includes Twelve Power Projects under CPEC Regime of 10,934 MW which are at different stages of implementation:



- Nine Coal Based Power Projects of 8,220M W including
  - › Five Thar Coal based Projects of 3,960MW (660 MW Engro, partially commissioned)
  - › Four Imported Coal based Project of 4,260MW (1,320 MW Port Qasim and 1,320 MW Sahiwal already commissioned while 1,320 MW CPHGC projects is partially commissioned.)
- Three hydro power projects of 2,714MWs (720 MW Karot and 870 MW Suki Kinari projects under construction)

- Approximately 900KMLong,4,000MW load transmitting capacity,  $\pm 660\text{kV}$  Matiari-Lahore HVDC Transmission Line Project (*under construction*)

**Table summarizing PPIB's portfolio of upcoming IPPs (till 30.06.19)**

Year	Hydel		Coal		RLNG		Total (MW)	No. of Projects
	MW	No	MW	No	MW	No		
<b>2019</b>	102	1	1,980	2	800	1	<b>2,882</b>	<b>4</b>
<b>2020</b>	-	-	-	-	463*	-	<b>463</b>	<b>-</b>
<b>2021</b>	720	1	1,320	3	-	-	<b>2,040</b>	<b>4</b>
<b>2022</b>	870	1	1,290	3	-	-	<b>2,160</b>	<b>4</b>
<b>2023</b>	-	-	1,980*	1	-	-	<b>1,980</b>	<b>1</b>
<b>2025</b>	700	1	-	-	-	-	<b>700</b>	<b>1</b>
<b>2026</b>	1,424	2	-	-	-	-	<b>1,424</b>	<b>2</b>
<b>2028</b>	1,048	3	-	-	-	-	<b>1,048</b>	<b>3</b>
<b>**</b>	1,547	6	163	1	-	-	<b>1,710</b>	<b>7</b>
<b>Grand Total</b>	<b>6,411</b>	<b>15</b>	<b>6,733</b>	<b>10</b>	<b>1,263</b>	<b>1</b>	<b>14,407</b>	<b>26</b>

\* Includes 2<sup>nd</sup> Units of projects from previous year

\*\* 1 x coal project under litigation, while 6 hydro projects are to be advertised soon by PPIB hence these projects are not likely to be operational before 2028.

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**Performance of**

**JAMSHORO POWER COMPANY LTD.**  
**(GENCO-I)**

**13 (VI) PERFORMANCE OF JAMSHORO POWER COMPANY LTD.  
(GENCO-I)**

**Operational Results during 2018-19**

Unit No.	Make	Commissioning Date	Installed Capacity MW	Present Capacity MW	Fuel Type	Net Electrical Out during 2018-19 (Gwh)	Fuel Mix
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**Thermal Power Station Jamshoro**

ST- 1	M/s FUJI Elect. CO. Japan	1990	250.00	182.45	F. Oil	100.735	100%
ST- 2	M/s CMEC, China	1989	210.00	154.73	F.Oil	64.502	54%
					Gas	60.353	50%
					RLNG	36.851	31%
					<b>Total</b>	<b>161.706</b>	<b>100%</b>
ST- 3	M/s CMEC, China	1990	210.00	155.36	F.Oil	86.526	48%
					Gas	119.889	66%
					RLNG	58.356	32%
					<b>Total</b>	<b>264.771</b>	<b>146%</b>
ST- 4	M/s CMEC, China	1991	210.00	156.48	F.Oil	96.089	3422%
					Gas	181.710	6471%
					RLNG	73.584	2621%
					<b>Total</b>	<b>351.383</b>	<b>12514%</b>

**Gas Turbine Power Station Kotri**

GT-3	M/S THOMSON Holland	1979	25.00	18.00	Gas	2.808	100%
GT-4	M/S THOMSON Holland	1979	25.00	18.00	Gas	13.385	100%
GT-5	M/S HITACHI Japan	1981	25.00	18.00	Gas	6.043	100%
GT-6	M/S HITACHI Japan	1981	25.00	18.00	Gas	10.381	100%
CCP-7	M/S HPEC China	1994	44.00	34.50		4.455	

**Coal Power Project, Jamshoro**

Unit # 5	Siemens, Germany & Harbin Electric International, China	Not Yet Installed	Work in Progress				
Unit # 6	Siemens, Germany & Harbin Electric International, China	Not Yet Installed	Contract Not Yet Awarded				

					F.Oil	347.852	38%
					Gas	399.024	44%
					RLNG	168.792	18%
<b>TOTAL IPCL FUEL-WISE GENERATION</b>					<b>Total</b>	<b>915.667</b>	<b>100%</b>
NEPRA Approved Capacity (MW)							755.52
Plant Availability Factor FY 2018-19 (%)							74.48
Plant Average Loading FY 2018-19 (MW) 44							514.18
Utilization Factor on NEPRA Approved Capacity (%)							18.75

Maintenance/ Overhauling

Annual Boiler Inspection of Unit # 1, 2, 3& 4 of TPS Jamshoro carried out.

Combustion Inspection of Unit # 3 of GTPS Kotri conducted.

**2X660 MW Coal Power Project**

EPC Contract for Lot-I (Unit-I & Balance of Plant) of 2x660 MW Coal Power Project has been awarded to M/s. SEIMENS – HEI Consortium and signed on 28.03.2018. Notice to proceed issued on 28.06.2018. The Site Leveling work is in progress.

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**PERFORMANCE OF**  
**CENTRAL POWER GENERATION COMPANY**  
**LIMITED GENCO-II**

### **13 (VII) PERFORMANCE OF 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, & KandhKot and Furnace Oil (HSFO). Gas supply is made through Gas Mixing station which is located inside the 600 MW CCP. The average daily gas quota at present is 360 MMCFD, which is supplied through gas pipelines as under:

**Mari** = **110 MMCFD**

**KandhKot – I, II & III** = **250 MMCFD**

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 2018-19 is as under:

<b>Month</b>	<b>Generation (KWh)</b>
JULY-17	819,475,034
AUGUST-17	852,664,479
SEPTEMBER-17	885,101,229
OCTOBER-17	877,821,967
NOVEMBER-17	821,112,965
DECEMBER-17	719,527,346
JANUARY-18	735,964,975
FEBRUARY-18	767,259,395
MARCH-18	808,981,721
APRIL-18	742,887,982
MAY-18	828,696,639
JUNE-18	726,990,291
<b>Total During FY2018-19</b>	<b>9,586,484,023</b>

The performance of the GENCO-II is continuously improving, which can be evident from continuously increasing trend of Generation:

<b>Year</b>	<b>Generation (KWh)</b>
2013-14	4,526,763,331
2014-15	5,714,554,920
2015-16	6,030,551,790
2016-17	8,078,982,690
2017-18	9,017,984,795

However, there are fuel availability constraints. The company endeavors to generate maximum economic power by utilizing available fuel resources.

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**PERFORMANCE OF**

**NORTHERN POWER GENERATION COMPANY**  
**LIMITED GENCO-III**

## **13 (VIII) PERFORMANCE OF NORTHERN POWER GENERATION COMPANY LIMITED GENCO-III**

Northern Power Generation company limited consists of three Power Complexes- Thermal Power Station Muzaffargarh (TPS Muzaffargarh) & Gas Turbine Power Station Faisalabad (GTPS) and CCPP Nandi Pur.

### **Year Book 2018-19 Comprises of**

1. Maintenance Activities
2. Statistical Data

### **Maintenance Activities**

#### **Thermal Power Station Muzaffargarh**

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

During the FY 2018-19 neither any Annual Boiler Inspection (ABI) nor major overhauling of any unit was carried out. Routine maintenance activities were performed as per procedure stated in the maintenance manual and recommended by the Original Equipment Manufacturer (OEM).

##### **Unit # 4**

During the FY 2018-19 following major activities were carried out in addition to routine maintenance activities of the plants.

#### **Mechanical Section**

- Auxiliary steam system was modified to reduce the start up cost and time of unit.
- Flue gas ducts were insulated with new blanket wool to reduce heat losses.
- Repair of ID fan (A&B) discharge side ducts towards stack.
- Rehabilitation / Replacement of damaged oil burner elevation-D corner-1 assembly with new one.
- GV2, Oil leakage was attended by inspection of its actuator and stem replacement.
- HP Heater No. 3 leaking tube was plugged & Condenser Cleaning was done.
- Feed Water Pump lube oil coolers were inspected and thoroughly cleaned.
- Hydraulic Coupling of Feed Water Pump No. 2, Its scoop tube inspection and bearing inspection
- Generator breaker air compressor replacement.
- Closed Cycle Cooling Water both Non Return Valves replaced.
- Main condensate delivery pump overhauled.
- 06 No. Cooling Towers showering nozzle replacement
- Make Up Water Pump No. 1 overhauled.

- Industrial Pump A overhauled.

### **Instrument Section**

- Faulty Temperature scanners of Generator Stator temperatures, damaged wires are replaced with new one.
- Replaced diaphragms changeover valve at dryers of Instrument Air Compressor.
- Replacement of Cameras for monitoring of Chimney Smoke & Boiler Drum Level.
- Faulty Pressure and Temperature Gauges of Feed water Pumps replaced.
- Turbine vibration monitoring and Protection system tested and Faulty Probe of Bearing No.1 replaced.
- Up gradation work of DCS system including installation, testing and commissioning carried out in Coordination with M/S Emerson Process Singapore Expert.
- Faulty cards of TSI Rotor Position Replaced with new one.
- Level Controller at Hydrogen Plant Repaired at Replaced.
- Position Feedback of Main Furnace Oil Controller Repaired and installed.

### **Electrical Section**

- Installation & Commissioning of Aux. transformer.
- Filling of oil in Aux. transformer.
- Dehydration of Aux. transformer.
- Maintenance of vacuum pump motor.
- Preventive maintenance of 11KV feeder of tube well.
- Maintenance of Bearing Cooler of Condensate Pump Motor-B.
- Replacement of 11KV D-fuse near 500KV Grid Station.
- Replacement of Arm of D17Q10 isolated.
- Maintenance of Over head Crane of turbine hall.
- Maintenance of Soot blowing system.
- Maintenance of AC plant of UCRNo.4.
- Maintenance of over head crane make-up pump house.

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

During the FY 2018-19 following major activates were carried out in addition to routine maintenance activates of the plants.

### **Mechanical Section**

- Installation of new steam line for soot blowing system for unit No.6.
- Replacement of damaged drain line of soot blowers for unit No.6.

- Repairing of steam coil air heater for unit No. 5&6.
- Repairing of damaged supports of flue gas ducts for unit No. 6.
- Repairing of flue gas ducts and its expansion joints for unit No.6.
- Overhauling of 16 Nos. gas and oil burners for unit No.6.
- Repairing of ID fan impeller side –B form central Workshop Faisalabad for unit No.6.
- Repairing of casing of ID fan for unit No.6.
- Overhauling of 02 Nos. air pre-heater soot blowers for unit No. 5&6.
- Replacement of damaged couplings of cooling tower fans for unit No. 5&6.

### **Instrument Section**

- 08 Nos. of actuators have been replaced with make: ITT SKOTCH Valve Model T1001, USA on 1<sup>st</sup> and 2<sup>nd</sup> elevation of furnace of unit No. 5&6.
- Rehabilitation of 10 KVA UPS of unit No. 5.
- Repairing of solenoid valves of instrument air compressor of unit No.5.
- Repairing of five electronic cards of turbine supervisory instrument (TSI) system's cabinet.

### **Electrical Section**

- Rewinding of 6.6 Kv motors stator of FD fan to make spare motor available in case of emergency.
- Overhauling of ID fan motor side-B of unit No.6.
- Maintenance and cleaning of 6.6 kv switchgears of both units.
- Maintenance and cleaning of .04 Kv breakers of compressors &R.O pumps of both units.
- Maintenance and cleaning of .04 Kv breakers of D.C lube oil, seal oil, &A.P.H of both units.
- Overhauling of excitation breakers KDQ1&KDQ2 and generator P.Ts&C.Ts panels cleaning of unit 5&6.
- Maintenance and cleaning of 0.4 Kv motors including cooling tower fan motors, R.O pump motors, air pre-heater, turning gear motors, AC&DC seal oil pump motors and inner cooling pump motors etc of both units.
- 220 Kv switchyard regular maintenance (including cleaning and tightening) work of different transmission lines.

## **425 MW CCPP NANDI PUR**

During this financial year 2018-19, combustion inspection of all 3 NosGTs was carried out and minor inspection of 3 NosHRSG and as well as condenser cleaning of CCPP (steam turbine) was carried out.

## **GTPSFAISLABAD**

During this financial year 2018-19, major overhauling of GT-8 was carried out and following major maintenance activates were performed.

- 10 Nos combustor baskets were replace with new one.
- 02 Nos stages of turbine diaphragms and shrouds were replace with new on.
- 02 Nos turbine bearings were replaced with newly re-babbitted bearing.
- 10 Nos fishtails were replace with advance technology parts.
- CCPP major overhauling was also carried out. During this overhauling 50 Nos leaky tubes of HRSG replaced with new one.

All the maintenance jobs were performed by local staff without any assistance of foreign expertise. Thus huge amount of foreign exchange was saved for the country.

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**PERFORMANCE OF  
LAKHRA POWER GENERATION  
COMPANY LIMITED (GENCO-IV)**

**(13(IX) PERFORMANCE OF LAKHRA POWER  
GENERATION COMPANY LIMITED (GENCO-IV)**

It is to apprise to your good office that the Lakhra Power Plant was under shutdown due to Fire-Incident happened in the underground Cables' tunnel since 20-07-2017. Efforts were made by local Engineers & Staff, to rehabilitate the Plant. By the Grace of GOD, the rehabilitation work of unit # 02 was completed in December-2017. Since the date of completion of rehabilitation work, the unit was kept ready to put into operation. But in this regard, the decision of higher authority / Energy Ministry did not allow the operation of Lakhra Power Plant on the reason of loss bearing Company and Plant was kept under shutdown position. Furthermore, the Plant (U#2) was then operated in First week of July 2018 for few hours as Test Run.

**Operational Results during 2018-19**

Unit No.	Make	Commissioning Date	Installed Capacity MW	Present Capacity MW	Fuel Type	Net Electrical Out during 2018-19 (Gwh)	Fuel Mix
Thermal power Station Lakhra							
ST-1	M/s Dong Fang China	06.06.1996	50	31.2	Lignite Coal	(While the unit wise net generation is not avertable due to Station Aux: Transformer) The Plant was under Shut down due to fire incident on 20 July-2017, Existing Power Plant is non-functioning and will become operational after its proposed rehabilitation	--
ST-2	M/s Dong Fang China	14.10.1995	50	31.2	Lignite Coal		--
ST-3	M/s Dong Fang China	03.01.1996	50	31.2	Lignite Coal		--

NEPRA Approved Capacity (MW)	62.4
Plant Availability Factor FY-2018-19 (%)	0.06
plant Average Loading FY-2018-19 (MW) Max:/ Min.	15/05
Utilization Factor on NEPRA Approved Capacity (%)	30



## **STATISTICAL DATA IN RESPECT OF GENCO-III (NPGCL)**

Name of Power Station	Gen. on Natural Gas (M.KWH)	Gen. on RLNG (M.Kwh)	Gen. on Fuel oil (M.Kwh)	Total Gen. (M.Kwh)	Gas / RLNG Cons. (MM CFT)	Fuel oil Cons. (M.Tons)	Max Load (MW)	Load Factor %	Utilization Factor %	Capacity Factor %	Avail. Factor %	Heat Rate Gross (BTU /Kwh)	Efficiency Gross %	Total operating Hours	Cost of F. oil (Rs/ Kwh)	Cost of N. Gas / RLNG (Rs / Kwh)
TPS Muzaffargarh																
Unit # 1 to 6	0	0.55	942.18	942.72	28.98	26217.95	11.05	9.74	7.97	81.85	98.98	10729	31.81	6504	17.76	18.88
GTPS Faisalabad																
Unit # 5 to 9	157.16	0	0	157.16	1801.87	0	11.9	15.08	15.74	48.77	92.99	11331	30.12	8472	0	17.85
425 MW CCPP Nandipur																
GT # 1 to 3 &STG	1784.29	0	0	1784.29	14299.31	0	56.1	36.31	39.10	36.05	90.81	7187	47.48	17447	0	11.28

GENCO-III has generated 2714.84 million KWH of electricity for Nation and earned Rs. 51.50 Billion Revenue for Company.

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**PERFORMANCE OF**  
**NESPAK**

## **13(X) PERFORMANCE OF NESPAK**

### **IN PURSUANCE OF RULE 25(2) & (3) OF THE RULES OF BUSINESS 1973**

#### **Ongoing Projects**

During the period July 2018 to June 2019, NESPAK continued to provide consultancy services to its Clients at home and abroad on 293 multidisciplinary projects. Following are the major ongoing projects of NESPAK:

- i. Projects under Annual Development Program
- ii. Reconstruction and Rehabilitation of Earthquake Affected Areas
- iii. Rehabilitation of Trimmu and Panjnad Barrages Improvement Project
- iv. 969MW Neelum-Jhelum Hydroelectric Project
- v. 500kV Transmission Line 3rd Circuit Jamshoro-Matiari-Moro-Dadu-Rahim Yar Khan and Moro Substation
- vi. Lahore Orange Line Metro Train System (27km)
- vii. 1263MW Re-Gasified Liquefied Natural Gas (RLNG) Based Combined Cycle Power Plant near Trimmu Barrage in Jhang District
- viii. Quetta Development Package - Roads Projects
- ix. Permanent Reconstruction Works in Federally Administered Tribal Areas (FATA)
- x. Punjab Intermediate Cities Improvement Investment Program (PICIIP)
- xi. 102MW Gulpur Hydropower Project
- xii. Karachi-Hyderabad Motorway (M-09) 136km
- xiii. Rehabilitation and Upgradation of Balloki Barrage and Lower Bari Doab Canal System
- xiv. Crescent Bay Development Project, Karachi
- xv. Jalalpur Irrigation Project
- xvi. Raising of Wala Dam, Jordan
- xvii. Water Transmission from Hali, Yabba, Qanuna and Laith Dams to Al-Shoaibah Desalination Plant Jeddah in Makkah Al-Mukarramah Region, Saudi Arabia
- xviii. 110kV Thuwal Substation/Transmission Line project Jeddah, Saudi Arabia
- xix. Jinnah Hospital Kabul and Naeb Amin Ullah Khan Logari Hospital at Logar, Afghanistan
- xx. Dams in Southern Region, Saudi Arabia

#### **New Projects**

During the period under review, the Company secured business worth Rs. 11.14 billion in Pakistan and overseas. Total numbers of projects secured during this period were 87 which included 76 domestic and 11 overseas jobs. Outside Pakistan, business was won in Gabon, Nigeria, Oman, Qatar and Saudi Arabia.

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

- i. 800MW Mohmand Dam Hydropower Project
- ii. 500kV Transmission Lines Interconnection Arrangement for Power Evacuation from SukiKinari, Kohala and Mahl Hydropower Projects in Northern Areas of Pakistan
- iii. Balochistan Water Resources Development Sector Project (BWRDSP)

- iv. Establishment of Infrastructure in LDA City (Phase-I)
- v. Naya Pakistan Housing
- vi. Remodeling/Expansion of Expo Center, Karachi
- vii. Development of Kartarpur Corridor Project
- viii. 500kV Double Circuit Hubco-Jamshoro Transmission Line
- ix. Infrastructure Works for DHA Housing Scheme Gujranwala
- x. DiamerBasha Dam Project (evaluation of contractors)
- xi. Hyderabad-Sukkur Motorway Project on Built Operate Transfer (BOT) Basis Under Public Private Partnership (PPP)
- xii. Dams in Southern Region, Saudi Arabia
- xiii. Road Connecting Thumait Interchange (Wilayat Bid) with Mubaila Interchange, Muscat Expressway, Oman
- xiv. Kano River and Hadejia Valley Irrigation Schemes, Dams Safety and Rivers Training in HadejiaJama'are River Basin, Nigeria
- xv. Booue and Tsengue-Leledi Hydroelectric Projects, Gabon Central Africa

### **Projects Completed**

During July 2018 to June 2019, NESPAK successfully completed 50 projects at home and abroad. Some important projects are:

- i. Punjab Irrigated Agriculture Productivity Improvement Project (PIAIP)
- ii. Mega Irrigation Projects, Punjab
- iii. Optimizing Watercourse Conveyance Efficiency Through Enhancing Lining Length in Punjab
- iv. Rahim Yar Khan 500kV Substation and Associated 500kV Transmission Lines
- v. Coal, Clinker and Cement Terminal at Port Qasim
- vi. Strengthening Works of Mangla Reservoir Rim along Mirpur-Kotli Road near Khaliqabad Chowk, Mirpur By-Pass Road
- vii. Transmission Line Interconnection for Dispersal of Power from UCH-II Power
- viii. 2530MW Rabigh and Shuqaiq Power Plants, Saudi Arabia
- ix. ZarqaMaen Dam, Jordan
- x. Upgradation and Rehabilitation of Rural Access Roads and Mobility Project II, Nigeria (1450 Km)

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**PERFORMANCE OF**  
**CPPA-G**

## **13(XI) PERFORMANCE OF CPPA-G**

This is with reference to the aforementioned letters, wherein CPPA-G has been directed to provide key initiatives/achievements. The following information is presented for the due consideration of the Ministry for the purpose:

### **Important Activities/Achievements of CPPA-G during 2018-19**

Following is the summary of recent activities, accomplishments and progress made by CPPA during the year 2018-19:

- 1. Launch of Centralized Data Exchange Portal (CDXP):** CPPA launched a Centralized Data Exchange Portal (CDXP) to provide centralized IT platform to connect the power sector stakeholders to enable them to interact and exchange authentic data and information with each other electronically. The CDXP with its backward integration with Power Generators and System Operator and forward integration with Distribution and other stakeholders of Pakistan Power Sector not only institutionalizes the power sector data but also bringing efficiency, transparency and modernization of business processes through end-to-end digitization. Minister of Energy (Power Division), Omer Ayub Khan, inaugurated the CPPA Data Exchange Portal (CDXP) on March 15, 2019.
- 2. Power Procurement on Behalf of DISCOs:** CPPA in 2019 signed six PPAs on behalf of DISCOs, with a total 2,685 MW of contracted capacity. Four PPAs were signed with small hydro-power plants while the other two were signed each with coal and RLNG combined cycle power plant.
- 3. Electricity Market Professional (EMP) Program:** CPPA launched Electricity Market Professional (EMP) Program in collaboration with Lahore University of Management Sciences (LUMS) and other international trainers, titled. This 20-day program was offered in four separate modules over a time span of around 6 months. Around 50 participants from power sector entities including Ministry of Energy (Power Division), NEPRA, NTDC, NPCC, DISCOs and K-Electric attended this program. Additionally, faculty members from indigenous universities, LUMS and NUST, also attended this program from the perspective of train-the-trainer. The aim of this program is to build the capacities of the key power sector entities in electricity markets and focus on developing understanding of the aspects of detail design of the proposed market model so that the it could accommodate the integrated thinking of the market participants.
- 4. Interim Solution on Wheeling:** Based on the directions from Honorable Secretary, MoE (PD), to come up with an interim solution to operationalize wheeling, CPPA in consultation with NEPRA and other relevant stakeholders prepared Draft Wheeling Regulation along with Commercial Code and other associated documents and submitted to NEPRA for review and approval. The draft of revised Wheeling Regulation is aimed at facilitating the wheeling arrangement between Generator and Bulk Power Consumers by removing the impediments that are hampering the operationalization of existing Wheeling Regulations.

5. **Recommendations on Net Metering:** Based on the direction of MoE (PD), CPPA provided detailed analysis of Net-Metering and its impact on existing consumers who do not opt for net-metering. As Pakistan's power sector is nascent, net-metering is a profitable proposition, however with the current tariff structure, the system fixed costs are to be borne by the other non-net metered regulated consumers and/or government subsidies.
6. **Development of Competitive Wholesale Market in Pakistan:** As mandated by the Economic Coordination Committee (ECC), CPPA-G prepared and submitted the Competitive Trading Bilateral Contracts Market (CTBCM) model and plan to NEPRA for approval. Subsequently, CPPA-G prepared comprehensive response to more than 300 comments of the stakeholders and submitted the same to NEPRA. Detailed designing of the market model and working on some important 17 group actions is in progress. The approval from NEPRA on CTBCM model and plan is expected by end of December 2019.
7. **Market Simulations:** Using sophisticated mathematical models and state-of-the-art tools, CPPA developed an Integrated Electricity Market Simulation Model (IE-MSM) that process different types of inputs and generate different analyses and results for analysis of future market contracts and prices. CPPA has also prepared and submitted to NEPRA the Market Simulation Report (2019-2030) which presents a summary of the simulation exercises done by CPPA-G for estimating the future market prices using least cost despatch optimization tool SDDP.
8. **Power Purchase Price Model (PPP):** In order to assist the Authority for ascertaining the monthly references of Energy Purchase Price & Capacity Purchase Price including the Use of System Charges & Market Operator Fee (collectively the “PPP”) through schedule of regulatory proceedings, CPPA prepared the PPP model that reports the projections of monthly references for the year 2019-20, while taking into consideration the existing peculiarities of the entire value chain of the power sector and submitted the report to NEPRA.
9. **CPPA’s Authorization as Market Operator:** CPPA received the Certificate of Registration No. MOR/01/2018 from NEPRA on November 16, 2018 to perform function as the Market Operator. CPPA has attained a legal status to operate as the Market Operator with the receipt of the registration from the Authority.
10. **Assistance to Power Sector Entities:** CPPA assisted NTDC Planning in preparation of Indicative Generation Capacity Expansion Plan (IGCEP) and consolidated long-term forecast report. CPPA also facilitated all DISCOs in preparation of their medium term forecast report based on Power Market Survey (PMS) methodology. Moreover, CPPA deployed the despatch optimization tool (SDDP) at NPCC and arranged trainings on Despatch Optimization Tool (SDDP) and Unit Commitment Tool (NCP) for NPCC through PSR Brazil.
11. **Market Operator’s New Office Building:** CPPA acquired a new office space in form of a dedicated building which could accommodate the existing as well as future strength of CPPA. Complete renovation of the building was performed and the offices

were furnished with necessary immunities and facilities keeping in view the safety, security and convenience of the employees.

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**PERFORMANCE OF**  
**POWER HOLDING PRIVATE LIMITED**

## 13(XII) PERFORMANCE OF POWER HOLDING PRIVATE 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 GoP. Keeping in view prevailing acute power shortage in the country, the 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.

2. 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).

3. During the year ended 30-06-2019, (i) Rs. 35.806 billion Syndicated Term Finance Facility, (ii) Rs. 25.00 billion Islamic Syndicated Term Finance Facility and (iii) Rs. 200.00 billion Pakistan Energy Sukuk-I, 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.

4. Summary of PHPL financing facilities as at 30-06-2019 are re-produced below:

Sr. No.	Facility Nature	Facility Amount	Outstanding Amount	Tenor	Pricing	Disbursement Date	Responsibility
1	136.454 Bln STFF	136,454,200,000	136,454,200,000	5 Years	3MK+2 % (1 % rebate on payment within 15 days)	29-12-16	MoE (PD)
2	6.069 Bln TFF	6,069,719,875	3,540,669,927	5 Years	3MK + 2.00% (1.00% rebate on payment within 15 days)	13-03-12	MoE (PD)
3	15.00 Bln TFF	15,000,000,000	7,500,000,000	7 Years	6MK + 2.00% (1.00% rebate on	08-11-12	MoE (PD)

					payment within 15 days)		
4	82.00 Bln PPTFCs	82,000,000,000	82,000,000,000	7 Years	6MK + 1.00%	10-09-12	MoE (PD)
5	25.00 Bln STFF	25,000,000,000	10,416,666,667	5 Years	3MK + 2.00% (1.00% rebate on payment within 15 days)	31-12-14	MoE (PD)
6	30.95 Bln STFF	30,950,000,000	30,950,000,000	5 Years	6MK + 2.00% (1.00% rebate on payment within 30 days)	21-05-14	MoE (PD)
7	40.00 Bln STFF	40,000,000,000	20,000,000,000	5 Years	3MK + 2.00% (1.30% rebate on payment within 15 days)	09-11-17	MoE (PD)
8	7.487 Bln STFF	7,487,000,000	3,119,583,333	5 Years	3MK + 2.00%	02-07-15	Finance Division
9	25.00 Bln Islamic STFF	25,000,000,000	25,000,000,000	7 years	6MK + 2.00% (1.15% rebate on payment within 30 days)	15-03-19	Finance Division
10	30.00 Bln (Islamic & Conventional)	30,000,000,000	30,000,000,000	5 Years	6MK + 2.00% (1.30% rebate on payment within 30 days)	08-03-17	Finance Division
11	41.00 Bln (Islamic & Conventional)	41,000,000,000	41,000,000,000	5 Years	6MK + 2.00% (1.30% rebate on payment within 30 days)	22-06-17	MoE (PD)
12	80.00 Bln STFF	80,000,000,000	80,000,000,000	5 Years	3MK + 2.00% (1.30% rebate on payment within 30 days)	30-03-18	MoE (PD) (Finance Division for interim six months)
13	50.00 Bln (A) STFF	50,000,000,000	50,000,000,000	5 Years	3MK + 2.00% (1.30% rebate on payment within 30 days)	04-05-18	MoE (PD) (Finance Division for interim six months)
14	50.00 Bln (B) STFF	50,000,000,000	50,000,000,000	5 Years	3MK + 2.00% (1.30% rebate on payment within 30 days)	30-05-18	MoE (PD) (Finance Division for interim six months)
15	35.806 Bln STFF	35,806,000,000	35,806,000,000	5 Years	3MK + 2.00% (1.00% rebate on payment within 30 days)	20-11-18	MoE (PD) (Finance Division for interim six months)
16	200.00 Bln PES I	200,000,000,000	200,000,000,000	10 Years	6MK + 2.00% (1.20% rebate on payment within 30 days)	01-03-19	MoE (PD)

					days)		
		854,766,919,875	805,787,119,927				

5. Despite financial constraints, the Company was able to perform its prime responsibility of holding the inter-corporate circular debt and executing the financing facilities from the banking system. During the year under review, PHL has paid mark-up amounting to Rs. 45.751 bln and has been able to avail rebate on all its facilities, wherever applicable. 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.

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**PERFORMANCE OF  
NATIONAL POWER PARKS  
MANAGEMENT COMPANY (PRIVATE)  
LIMITED**

**13(XIII)      PERFORMAN CE OF NATIONAL POWER PARKS MANAGEMENT  
COMPANY (PRIVATE) LIMITED**



Federal Government established National Power Parks Management Company (Pvt.) Ltd. on March 02, 2015 under Companies Ordinance, 1984 to install, commission, operate and maintain two (02) Re-

Gasified Liquefied Natural Gas (RLNG) based power plants of 1000 – 1200 MW capacity. The company is fully owned and controlled by the Government of Pakistan through Ministry of Energy (Power Division). A summary of projects, their progress and financial / technical details is as under:

<b>Project Brief</b>	<b>HBS Project</b>	<b>Balloki Project</b>
<b>EPC Cost (PKR)</b>	61,509 Million	58,707 Million
<b>Non-EPC Cost (PKR)</b>	36,595 Million	33,630 Million
<b>Total Project Cost (PKR)</b>	98,104 Million	92,337 Million
<b>Capacity (Gross)</b>	1,230.540 MW	1,223.106 MW
<b>Efficiency at R-LNG (Combined Cycle)</b>	62.44%	61.63%
<b>Technology</b>	2 x GE H Class-9HA.01 Gas Turbines 2 x Alstom H.R.S.Gs 1 x Alstom Steam Turbine	2 x GE H Class-9HA.01 Gas Turbines 2 x Hangzhou H.R.S.Gs 1 x Alstom Steam Turbine
<b>EPC Contractors</b>	JV of Power Construction Corporation of China & Qavi Engineers (Pvt) Ltd.	JV of Harbin Electric International Company Limited & Habib Rafiq (Pvt) Ltd.
<b>Signing of EPC Contract &amp; Notice to Proceed</b>	13 <sup>th</sup> Oct 2015	2 <sup>nd</sup> Nov 2015
<b>Gas Supply Agreement</b>	29 <sup>th</sup> Oct 2016	29 <sup>th</sup> Oct 2016
<b>Power Purchase Agreement</b>	29 <sup>th</sup> Oct 2016	29 <sup>th</sup> Oct 2016
<b>Implementation Agreement</b>	14 <sup>th</sup> Nov 2016	14 <sup>th</sup> Nov 2016
<b>O&amp;M Agreement</b>	4 <sup>th</sup> May 2017	5 <sup>th</sup> May 2017
<b>First Fire of GT # 1</b>	28 <sup>th</sup> Apr 2017	6 <sup>th</sup> Jul 2017
<b>First Fire of GT # 2</b>	19 <sup>th</sup> May 2017	27 <sup>th</sup> Jul 2017
<b>Simple Cycle COD</b>	July 18, 2017	Aug 30, 2017
<b>Combined Cycle COD</b>	May 09, 2018	July 29, 2018
<b>Working Capital Arrangement (Million Rs.)</b>	33,508.00	33,685.00
<b>Electricity generated (MWh)</b>	7,127,237	5,198,539
<b>FY 2018-19</b>		

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**PERFORMANCE OF**  
**POWER INFORMATION TECHNOLOGY**  
**COMPANY (PITC)**

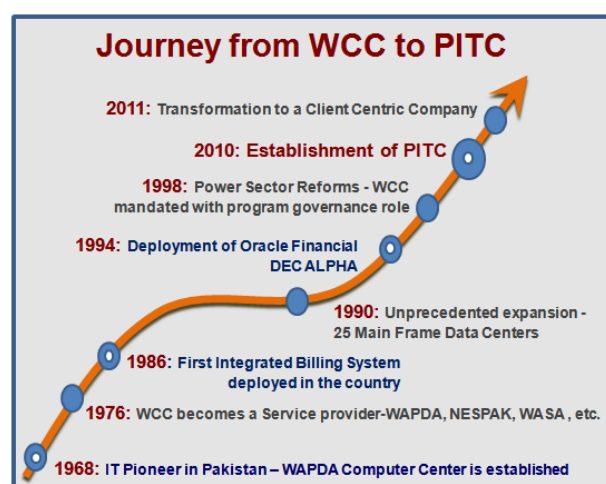


## 13(XIV) PERFORMANCE OF POWER INFORMATION TECHNOLOGY COMPANY (PITC)

### 1. Background

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.

### 2. PITC Vision, Mission, Objectives and Functions

#### 2.1 Vision

Harness the potential of Information Technology as a key contributor in the development of Power Sector of Pakistan

#### 2.2 Mission

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

### **2.3 Objectives**

- a) 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.
- b) 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.
- c) 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.
- d) To carry-out and accomplish the job of inter-linking various organizations, departments and agencies through automation

### **2.4 Functions**

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

### **3. Company Business Activities (2018-19)**

- a) Development / Maintenance / Updating and support for Customer Billing Software Application for all DISCOs.

- b) Establishment / Operation of centralized call centre and Implementation of CCMS for all DISCOs for facilitation of over 27 million consumers of DISCO's.
- c) Working as central hub for provisioning of MIS (Management Information System reporting) to Ministry of Energy (Power Division), PEPCO, and other Govt. entities (Govt. Departments, FBR, PTV etc.) on regular basis / as and when required.
- d) Implementation and execution of Load Data Improvement Project for monitoring of Distribution system.
- e) Provision of Automatic Metering Infrastructure facilities to DISCOS
- f) Implementation of new technologies for improved meter reading i.e.(Application of AMR & HHU).
- g) Hosting of PEPCO, DISCOs and WAPDA web portals along with maintenance of these web portals.
- h) Provisioning of technical services for hardware procurement to all DISCOs and PEPCO related formations / companies.
- i) Provisioning of trainings to IT/Non IT staff of PEPCO/WAPDA formations and companies.
- j) Provisioning of Data Centre facility to DISCO's/NTDC and other Power Sector organs.
- k) Additionally PITC is working on establishment of cloud computing facility for all DISCOS in the fields of ERP, AMI, GIS and Business intelligence.

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