



# Central Power Purchasing Agency Guarantee Limited

A Company of Government of Pakistan



CPPA-G/2016/CEO/SMD/ 8486-87

April 12, 2017

The Registrar NEPA,  
NEPA Tower,  
Attaturk Avenue (East) G-5/1,  
Islamabad.

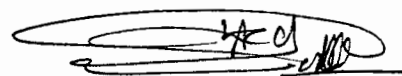
**Subject: Submission of Market Operator Registration Application**

The Board of Directors of CPPA-G in its 25<sup>th</sup> meeting held on April 11, 2017 authorized CPPA-G to submit the Registration Application before NEPA to register as the Market Operator. Thereby as authorized by the Board and in compliance to the Market Operator Registration, Standards and Procedures Rules 2015, Rule 3, Sub-Rule (2), the Applicant with its address at ENERCON building G-5/2, Islamabad is filling the Registration Application before NEPA to register as the Market Operator.

The Registration Application has been prepared by CPPA-G keeping in view the requirements as laid down under the Rule 3, Sub-Rule (2) of the Market Operator Registration, Standards and Procedures Rules 2015. The following table maps the requirements as laid down in the rules against the contents in the Application attached with this letter:

#	Requirements as Per Rule 3, Sub-Rule (2)	Reference in Application
1	Copies of memorandum of association and articles of association	Section 1 and Appendix-2
2	Particulars of its Chief Executive Officer and Directors	Section 2 and Annexure-1
3	Documents showing that satisfactory system and controls are available to conduct the market operations	Section 3
4	Documents showing that adequate financial, technical, organizational and human resources are available to act as the market operator in a proper and efficient manner on an ongoing basis	Section 2, Section 3, Section 5, Section 6, Section 7 and 8. Annexures 1,2, 3, 4, 6 & 7
5	Documents showing that sufficient contractual arrangements are in place to conduct the market operations	Section 4 and Annexure-5
6	Draft commercial code	Already approved by the Authority
7	The fee as may be specified by the Authority	Section 9

The Application is attached with this letter.

  
(Abid Latif Lodhi)

Chief Executive Officer, CPPA-G

**Distribution:**

- Company Secretary, CPPA-G, Islamabad
- Master File

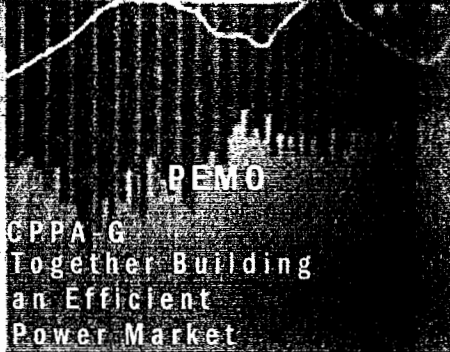
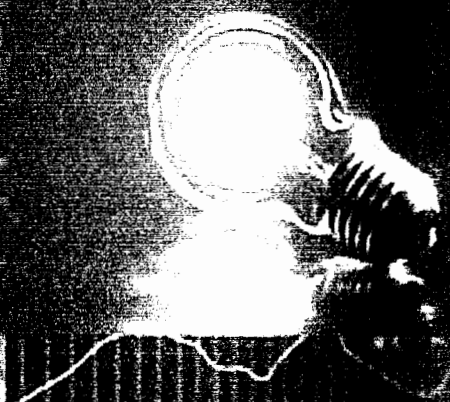
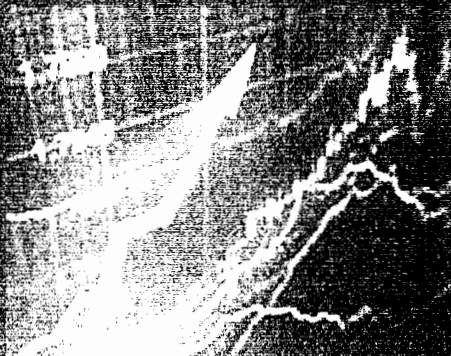
Transparency

Excellence

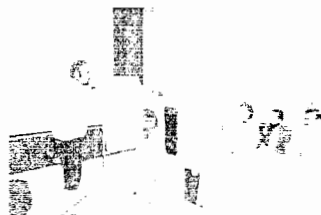
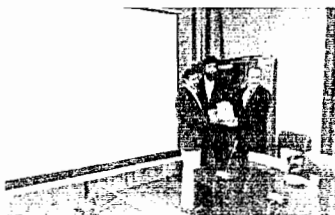
Teamwork



# Market Operator Registration Application



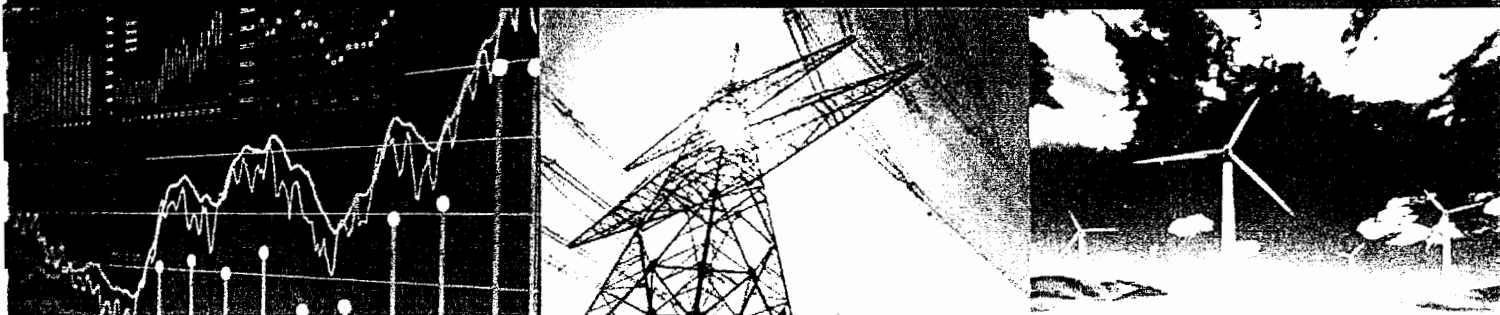
**PEMO**  
CPPA-G  
Together Building  
an Efficient  
Power Market



**Our Vision** is to become a world-class  
Market Operator by providing the optimal  
environment for trading electricity in the  
Pakistani Power Market

**Our Core Values**

Transparency – Excellence - Teamwork





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## ACRONYMS

AA	Administrative Agreement
ADB	Asian Development Bank
AEDB	Alternative Energy Development Board
AGMs	Annual General Meetings
APEx	Association of Power Exchanges
BIST	Istanbul Stock Exchange
BoD	Board of Directors
BPC	Bulk Power Consumer
BTA	Business Transfer Agreement
CEO	Chief Executive Officer
CPF	Contributory Provident Fund
CPPA-G	Central Power Purchasing Agency Guarantee
CRPEA	Central Registrar and Power Exchange Administrator
CTBCM	Competitive Trading Bilateral Contract Market Plan
CV	Curriculum Vitae
DA	Direct Agreement
DISCO	Distribution Company
DPC	Distribution Planning Code
ECC	Economic Coordination Committee
EMRA	Energy Market Regulatory Authority, Turkey
EPA	Energy Purchase Agreement
EPIAS/EXIST	Energy Exchange Istanbul – The Market Operator
ERP	Enterprise Resource Planning
EUAS	Turkish Electricity Generation Company
FBR	Federal Board of Revenue
FESCO	Faisalabad Electric Power Company
FY	Fiscal Year
GENCO	Generation Company
GoP	Government of Pakistan
GWh	Gigawatt hour
HR	Human Resource
HR&A	Human Resources and Administration
HSD	High Speed Diesel
HVRT	High Voltage Ride-Through
IESCO	Islamabad Electric Supply Company
IPP	Independent Power Producer
ISO	Independent System Operator
IEP	Integrated Energy Plan

IT	Information Technology
JD	Job Description
KE	K-Electric
KPI	Key Performance Indicator
LAN	Local Area Network
LCIA	London Court of International Arbitration
LESCO	Lahore Electric Power Company
MoF	Ministry of Finance
MP	Market Participant
MW	Megawatt
MWh	Megawatt hour
MWP	Ministry of Water and Power
MYT	Multi-Year Tariff
NEPRA	National Electric Power Regulatory Authority
NPCC	National Power Control Center
NTDCL	National Transmission and Dispatch Company Limited
PC	Planning Code
PEMO	Pakistan Electricity Market Operator
PESCO	Peshawar Electric Supply Company
PJM	Regional transmission organization, US
PMP	Project Management Professional
PMS	Performance Management System
PMS	Power Market Survey
PPA	Power Purchase Agreement
PPAA	Power Procurement Agency Agreement
PPIB	Private Power & Infrastructure Board
RFO	Residual Fuel Oil
R-LNG	Re-gasified Liquid Natural Gas
RMS	Revenue Metering System
RTO	Regional Transmission Organization
SAN	Storage Area Network
SCADA	Supervisory Control and Data Acquisition
SECP	Securities and Exchange Commission of Pakistan
SFS	System for Settlement
SO	System Operator
TDS	Tariff Differential Subsidy
TEAS	Turkish Electricity Generation and Transmission
TEC	Turkish Electricity Corporation
TETAS	Turkish Electricity Trading and Contracting Company
TEDAS	Turkish Electricity Distribution Company

TNO	Transmission Network Operator
TWh	Terawatt Hour
U.K	United Kingdom
U.S	United States
USAID	United States Agency for International Development
WAN	Wide Area Network
WAPDA	Water and Power Development Authority
ZVRT	Zero Voltage Ride-Through

## **I- COMPANY'S BACKGROUND AND PROFILE**

### **I.1- PREAMBLE**

Central Power Purchasing Agency (Guarantee) Limited ("CPPA") (the "Applicant" or the "Company") is a company incorporated under the Companies Ordinance 1984 (XLVII of 1984) and granted a Corporate Universal Identification No. 0068608 by the Security Exchange Commission of Pakistan. The Applicant was incorporated in the year 2009 after its segregation from National Transmission and Dispatch Company (NTDC), however it continued its operations under NTDC (as department of NTDC) till June 2015, when a separate entity was made operational.

The National Electric Power Regulatory Authority ("NEPRA"), with the approval of the Federal Government and in exercise of the powers conferred by section 46 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 has promulgated the National Electric Power Regulatory Authority (Market Operator Registration, Standards and Procedure) Rules, 2015 (the "Rules"). As per Rule 3 of these Rules, NEPRA is the body empowered to register an entity as market operator and authorize the same to conduct the market operations.

Thus, if an entity desirous of being registered as a market operator submits its application for the same and satisfies the eligibility criteria set forth in Rule 3(2), NEPRA is empowered to register such entity as the market operator and authorize it to conduct the market operations.

Further, as per Rule 5 of the Market Rules, CPPA-G shall be deemed to be authorized and registered as the market operator. Thus, for a period of two years from the commencement of the Rules CPPA-G has, by operation of Rule 5, been deemed to be the market operator and authorized and registered to conduct the market operations for this period.

Therefore, in view of above and in compliance to Rule 3, Sub-Rule (2) of the Rules, the Applicant with its address at ENERCON building G-5/2, Islamabad is filling the Registration Application before NEPRA to register as market operator. The registration application requirements as per Rule 3, Sub-Rule (2) are reproduced at **Appendix-1** for reference.

### **I.2- CPPA-G'S TRANSITION JOURNEY**

As elaborated under section 1.1 above, CPPA-G is a non-profit independent company established under the Companies Ordinance, 1984. Initially, it was a part of NTDC and performed its functions as a department of the organization and was located at WAPDA House, Lahore. Its major functions included billing and settlement, treasury and it worked as an agent for power procurement on behalf of DISCOs including the import of power from other countries.



Considering the importance of an independent Market Operator role and the need to develop competitive power market, on direction of Government of Pakistan (GoP), the NTDC's transmission license was bifurcated. The Market Operator role was transferred from CPPA of NTDC to CPPA-G in mid of 2015 under the Business Transfer Agreement (BTA) between NTDC and CPPA-G. Thereby, NTDC as per the amended transmission license now performs the roles of Transmission Network Operator (TNO) and System Operator (SO).

The CPPA-G in the span of last one year has gained tremendous momentum and attained several major milestones to become a proficient Market Operator of the future. For instance from strengthening the internal processes (such as approval of HR manual), aligning the organizational structure with business needs, hiring of key staff, completing the transition of offices from Lahore to Islamabad, initiating the market development initiative, to implementation of key initiatives like Enterprise Resource Planning (ERP), CPPA-G has made tremendous progress. Also, worth-mentioning is the initiative on market development in which CPPA-G has also achieved important milestones to help enable and the competitive power market environment by 2020.

This could not have been achieved without adding and augmenting the core functions of the company. The core functions like strategy and market development, corporate planning, taxation, information technology, energy and demand forecasting were added in mid of 2016 and are fully functional at CPPA-G.

It is also important to note here that while discharging its current role as per the prevailing market model, CPPA-G is following a well thought out plan to build itself for future bilateral market and competitive market operations. In this regard, integrated initiatives have already been started in the areas of (a) Systems and Controls (ERP implementation, Billing and Settlement Systems, Building IT infrastructure, ensuring smooth interface of CPPA-G's systems with NTDC's Revenue Metering and SCADA systems etc.), (b) Human Resource (hiring experienced team, conducting organizational restructuring, alignment of policies and procedures, developing the Performance Management System (PMS) etc.), (c) Contractual Arrangements (Power Purchase Agency Agreements (PPAA), administrative agreements for portfolio PPA/EPA, bifurcation exercise of PPA's into connection and commercial parts etc.) and (d) Market Development (centrally facilitating the power market transition by providing opportunities for capacity building, proposing the market model, preparing the Competitive Trading Bilateral Contract Market Plan (CTBCM) etc.).

In a nutshell, CPPA-G as tool for NEPRA is fully geared-up to implement relevant provisions of NEPRA Act, Rules and Codes.

### **1.3- MEMORANDUM AND ARTICLES OF ASSOCIATION**

The Articles of Association (Articles) and Memorandum of Association (Memorandum) together comprise the constitutive documents of a company.

In the context of the Central Power Purchasing Agency (Guarantee) Limited (CPPAG), the Memorandum provides for:

- i. The description of the company, including the company's name and where its registered office is located.
- ii. How the company is limited i.e. In the case of CPPAG the company is limited by guarantee not having share capital as per section 17 of the Ordinance, and is formed as a not-for-profit as per section 42 of the Ordinance.
- iii. The objects and purpose of the company.
- iv. The utilization of the income and property of the company, i.e. for furthering the objects and purposes of the company as described by the Memorandum.
- v. The other activities the company may engage in in furtherance of its stated objects and purposes.
- vi. The role of the company in facilitating the transition of the domestic power market from the single buyer model, through the transitional single buyer plus model, and thence to the competitive energy market model.
- vii. Limiting the liability of the members of the company.
- viii. The indemnification of the company's officers.
- ix. An undertaking by the members of the company to contribute to the assets of the company in the event that the latter is being wound up with outstanding debts, provided that such contribution may not exceed Rs.1,000/- (one thousand Rupees only).

**The Company's Articles of Association provides for:**

- i. The Members of the company:
  - a. Their number and composition.
  - b. Their meetings and how such meetings are conducted.
  - c. The conduct of voting during meetings of the members.
- ii. The Board of Directors (Board):
  - a. The powers and duties of the Directors.
  - b. Their composition and appointment.
  - c. The formation of committees of the Board, including the standing committees.
  - d. Their proceedings.
  - e. The conduct of their meetings.
- iii. The Chief Executive (CEO):
  - a. His appointment.
  - b. His duties and responsibilities.
- iv. The Seal of the company and,
- v. The winding up of the company.

The CPPA-G's Memorandum and Articles of Association are placed at **Appendix-2**. Furthermore, it is submitted that the progress in the operations of the Applicant as the

Market Operator requires few changes in its constitutive documents to (a) elaborate all its functions in accordance with the law and (b) may also reflect any changes in its functions as a result of the new Market Model being worked out.

Therefore, the Applicant intends to amend its constitutive documents in the near future as per the relevant provision of the Ordinance, wherein besides the change in name, the Applicant also intends proposing the detailed description of the work under the objective clause.

#### 1.4- **CORPORATION DETAILS**

The CPPA-G is a Public Sector Company limited by Guarantee, not having a share Capital registered with Securities and Exchange Commission of Pakistan (SECP), under the Companies Ordinance, 1984.

The Company's Head Office is located at ENERCON building G-5/2, Islamabad. The Company also has one Branch Office which is operational in ENERCON building G-5/2, Islamabad. The Company intends to locate the Head and Branch Office in one location in near future to further optimize business operations and ensure cross functional harmony.

The Company's landline contact number of is: 051-9213616; Fax: 051-9213617 and its website's URL is: [www.cppa.gov.pk](http://www.cppa.gov.pk).

## **2- PERSONNEL PROFILE**

This section begins with particulars of the Board of the Directors of CPPA-G and its CEO, than summarizes the profiles of senior management and the consultants engaged with CPPA-G respectively.

### **2.1- PARTICULARS OF ITS DIRECTORS AND CHIEF EXECUTIVE OFFICER**

The Company's Board comprises of a right mix of members from policy, finance to operations background. In-terms of institutions, it has members from MWP (the policy makers), NTDC (the market administrator), to IESCO (the market participant) striking a right balance. The CPPA-G's Board ensures that the company adheres to the corporate governance best practices while being compliant with the policy, legal and regulatory requirements. The board through its collective wisdom provides strategic direction to the company to ensure that it achieves its goals and objectives.

Currently, CPPA-G has seven members in its board. Each member of the board is well qualified and possesses over 20 years' of professional experience in their respective field. Details of particular of board of directors are as follows:

- |  |  |
|--|--|
| 1. Mr. Yousaf Naeem Khokhar,<br>Secretary (Water and Power)<br><b>Chairman</b> | 2. Dr. Khaqan Hassan Najeeb,<br>Director General, Implementation &<br>Economic Reform Unit/Finance<br>Division,<br><b>Member</b> |
|--|--|

- |  |   |
|--|---|
| 3. Mr. Muhammad Zargham Eshaq Khan,<br>Joint Secretary (Power/Finance),<br><b>Member</b> | 4. Mr. Muhammad Imran,<br>Chief Executive Officer, GENCO<br>Holding Company,<br><b>Member</b> |
| 5. Mr. Basit Zaman Ahmad<br>Chief Executive Officer, IESCO,<br><b>Member</b>             | 6. Dr. Fiaz Ahmad Chaudhry,<br>Managing Director, NTDCL,<br><b>Member</b>                     |
| 7. Mr. Abid Latif Lodhi,<br>Chief Executive Officer, CPPA (G),<br><b>Member</b>          |   |

The Board aims to make CPPA-G a truly corporate body by setting standards at the board level, practicing them and creating an environment to ensure that good corporate practices permeates throughout the organization. The Company's Board achieves this goal by constituting the committees. The committees of a board are a function of its business needs. Therefore, apart from the audit and finance committee (which is mandated by law), all others committees in CPPA-G are formed based on the needs of the company.

Keeping in-view the requirements of a Market Operator in general and business needs in particular, the following five committees to the board have been constituted. Each committee has specific object for its establishment. Operations and members of these committees are discussed hereunder:

**1. Audit Committee:**

The Audit Committee of CPPA-G Board of Directors, established in July 2015 provides oversight of financial reporting and disclosure and audit and control functions. Currently, the committee comprises of the following members, including the Chairman:

- i. Muhammad Zargham Eshaq Khan (Chairman)
- ii. Mr. Muhammad Imran

**2. Human Resources Committee:**

The Human Resources Committee of CPPA-G Board, established in December 2013 deals with all employee related matters including approval of HR manual and its amendments from time to time, senior management's recruitment, training, remuneration, performance evaluation, succession planning, and measures for effective utilization of the employees of CPPA-G. Currently, the committee comprises of the following members, including the Chairman:

- i. Dr. Khaqan Hassan Najeel (Chairman)
- ii. Muhammad Zargham Eshaq Khan
- iii. Muhammad Imran
- iv. Abid Latif Lodhi

**3. Finance Committee:**

The Finance Accounts & Treasury Sub-Committee is a committee of CPPA-G Board, established on 17<sup>th</sup> July 2016 and comprises of three members. Current function of the committee is to assist in finance, accounts and treasury matters of organization. Committee's mission is to introduce modern financial management systems, including transparency of financial transactions and finance accounts and treasury system.

- i. Muhammad Zargham Eshaq Khan (Chairman)
- ii. Muhammad Imran
- iii. Basit Zaman Ahmad

**4. Procurement Committee:**

Procurement committee of CPPA-G Board was established in July 2015. The function of this committee is to ensure transparency in power procurement transactions.

Currently, the committee comprises of the following members, including the Chairman:

- i. Dr. Fiaz Ahmad Chaudhry (Chairman)
- ii. Dr. Khaqan Hassan Najeeb
- iii. Muhammad Zargham Eshaq Khan

**5. ERP Implementation Committee:**

This special purpose committee on ERP implementation was established in June 2016.

This committee functions to provide an oversight for ERP project implementation, resolve strategic issues and provide support to ensure that this key initiative is completed within time.

- i. Dr. Khaqan Hassan Najeeb (Chairman)
- ii. Muhammad Zargham Eshaq Khan
- iii. Basit Zaman Ahmad

**2.2- PARTICULAR OF THE SENIOR MANAGEMENT**

Globally the Market Operators in different countries have a smaller lean organization with experienced, capable and motivated staff. The electricity Market Operator functions requires highly skilled and experienced human resource to operate effectively. Although, the combination of the three organizational pillars i.e. right people, efficient processes and technology makes an organization effective but even amongst the three the people's dimension is most important and imperative.

In CPPA-G the strategy devised is to build a lean organization with competent, experienced and motivated employees and provide an environment that not only fosters high productivity but also help CPPA-G to retain such resources.

Currently, CPPA-G has a sanctioned strength of 218 employees, amongst which positions 163 are staffed and 55 positions are being under recruitment. There are eleven cadres in CPPA-G, starting from Cadre-1 to Cadre-11, which are further classified into staff (Cadre-1 to 5) and professional cadres (Cadre-6 to 11).

The senior management is identified as employees working in Cadres 9, 10 and 11. The senior management of CPPA-G is a balanced mixed of professionals who have extensive professional experience in billing, settlement, payments, power procurement, legal, regulatory, strategy, financial, project management, information technology and human resource domains.

Since June 2015, the company has attracted experienced and high quality senior managers through a carefully designed recruitment process and compensation which is the main strength of CPPA-G. The management is dedicated to ensure that the company remains compliant and fulfills its current duties and obligations, while paving the path for the future competitive power market under the given policy direction and regulatory frameworks.

The following table (Table-1) provides summary of experience of thirty senior managers working in CPPA-G under different functions. The detailed CVs of the senior managers are placed at **Annexure-1**:

Table-1

Sr. No.	Designation	Name	CPPA-G Grade	Power Sector Experience
1	Chief Executive Officer	Mr. Abid Latif Lodhi	G- 11	27
2	Chief Financial Officer	Mr. Rihan Akhtar	G-10	17
3	Chief Legal Officer	Mr. Abdul Majid Khan	G-10	23
4	Secretary (BOD)	Mr. Noman Rafiq	G-10	17
5	Deputy General Manager (Finance)	Mr. Muhammad Shabbir	G-10	21
6	Chief Technical Officer	Mr. Ghulam Murtaza	G-10	34
7	Director General (IT)	Mr. Khurshid Alam Pervaiz	G-10	34
8	Deputy General Manager (Tech)	Mr. Mansoor Hussain	G-10	32
9	Deputy General Manager (Tech)	Syed Iqbal Mehdi	G-10	31
10	Director General (HR&A)	Mr. Zafar Javed	G-10	26
11	Deputy General Manager (Finance)	Mr. Haroon Masood	G-10	26
12	Manager Finance	Mr. Muhammad Aslam	G-09	12
13	Manager (ERP)	Mr. Naimat Ullah	G-09	15
14	Manager Corporate Accounts	Mr. Sibtain Tahir	G-09	10
15	Manager Strategy & Market Development	Mr. Omer Haroon Malik, PMP	G-09	15



16	Manager Taxation	Mr. Muhammad Asad	G-09	21
17	Manager (Legal)	Syed Abid Rizvi	G-09	6
18	Manager (Tech) – I	Mr. Nazif Hassan	G-09	29
19	Manager (Tech)- IX	Mr. Javed Aslam	G-09	30
20	Manager (Tech)- IV	Mr. Aijaz Mohsin Hashmi	G-09	26
21	Manager (Tech) – III	Mr. Zafar Sindhu	G-09	30
22	Manager (Tech)- V	Mr. Tariq Nasrullah Malik	G-09	26
23	Manager (Tech)- II	Mr. Saqib Shamim	G-09	24
24	Manager (Tech)- X	Mr. Asher Ali	G-09	25
25	Manager (Tech)- VI	Mr. Mubasher Ahmed Qureshi	G-09	27
26	Manager (Tech)- XI	Mr. Munawar Hussain	G-09	26
27	Manager Operation 1 (IT)	Mr. Aamir Rashid	G-09	34
28	Deputy Manager Development (IT)	Mr. Waqar Hussain	G-09	30
29	Manager Operation 2 (IT)	Mr. Shoukat Ali	G-09	26
30	Manager Development (IT)	Mr. Ather Rasheed Hashmi	G-09	28

CPPA-G is the organization led and managed by qualified leadership who have diversified experience in the industry in general and in the power sector in particular. The organization is headed by Chief Executive Officer and under his command the operations of the organizations are performed.

Mr. Abid Latif Lodhi is the Chief Executive Officer of CPPA-G and has diversified professional experience, spanning over 27 years in power and water utilities sector. He has unprecedented experience concerning policy, regulation, strategic corporate planning, corporate performance, pricing, finance and accounting, fund management, taxation matters, ERP implementation, developing of tariff and financial models both for annual and multiyear tariff, project implementation including development of accounting manual and internal audit manual for all power distribution companies of Pakistan

Mr. Rihan Akhtar is Chief Financial Officer and he is looking after the financial operations of the organization. He has been working in the power sector of Pakistan for more than 17 years and has sound knowledge of financial planning and strategy, profitability, strategic planning, quality management, process improvement, forecasting and developing budgets. During his professional career, he has worked in a number of organizations and proved his worth at various levels.

Mr. Abdul Majid Khan is the Chief Legal Officer of CPPA-G and has extensive professional experience of more than 23 years in the power sector with the focus on power and infrastructure project development and financing, negotiation of power purchase and fuel supply agreements, operation and maintenance and turnkey construction contracts and security agreements. During his professional career, he has worked with PPIB, NTDC, ENGRO and other such organizations and proved his worth.

Mr. Ghulam Murtaza is the Chief Technical Officer of CPPA-G and has been working in power sector for more than 34 years. He has worked at WAPDA, various DISCOs and CPPA-G. He has been involved in the Operations and Maintenance of Distribution System as well as Grid System. In addition to this, he has an experience in sales of power.

The combination of experience and expertise of senior, middle and junior management has enabled CPPA-G to operate independently, since June 2015. The organization treats its all employees equally important and understands that meeting the goals and objectives of the company will only be achieved if all the employees are geared towards achieving them.

### 2.3- CPPA-G'S CONSULTANTS TEAM

To discharge its role as an effective Market Operator, CPPA-G has also enhanced its technical capacity by engaging consultants with vast international and or local experience in the areas of market development, energy and demand forecasting, human resources and IT systems design and implementation.

The following table (Table-2) lists the international and local experts working with CPPA-G. Their detailed CVs are placed at **Annexure-2**:

Table-2

Sr. No.	Title	Name	Overall Experience	Power Sector / Energy Markets Experience
1	Power Market (Senior Settlement and Regulatory) Expert	John Swinscoe	31	22
2	Power Market (Senior Settlement, Policy and Regulatory) Expert	Roberto D'Addario	36	29
3	Power Market (Senior Generation, Transmission and Distribution) Expert	Jorge Bircher	37	37
4	Power Market (Senior Modeling and Simulations) Expert	Jorge Karacsonyi	42	42
5	Human Resources Expert	Alia Zafar	19	-
6	Energy and Demand Forecasting	Bilal Ahmad	36	36

7	Settlement System Team Lead	Alan G. Isemonger	21	18
8	Settlement System IT Infrastructure Expert	Ali Ahmad	18	15
9	Trainer	Kasper Wallet	25	25

Furthermore, CPPA-G has also taken on-board M/s InfoTech (a local renowned ERP solution vendor) for implementation of ERP project with oversight provided by CPPA-G's ERP team. It is also worth mentioning that the design and implementation of System for Settlement (SFS) will be completed by May 2017 followed preparation of project documents and procurements packages.

In a nutshell, through a combination of regular staff, individual consultants and firms, CPPA-G has built extensive human resource capacity to discharge its current duties and work on developing the power market of the future.

### 3- ORGANIZATION, FUNCTIONS, SYSTEMS AND CONTROLS

The following sections highlights the overall organization of CPPA-G, the systems implemented and being implemented and the controls established within the company.

#### 3.1- THE ORGANIZATION AND ITS RESTRUCTURING

The Company has successfully completed the first round of its organizational restructuring, wherein the structure of the organization was fine-tuned to meet the current and emerging (yet known) business requirements. The current organizational chart is placed at **Annexure-3** for reference.

During **Phase-I** of organizational restructuring, the strategic restructuring process involved mainly (a) the preparation and approval of HR Manual (completed), (b) transition of Lahore based employees to Islamabad and revamping the office space (completed), (c) staffing of key strategic C-level positions duly approved by the Board of Directors on contract basis (completed), (d) inducting management trainees to build capacity for the future (completed) and (e) inducting functional/technical consultants to help CPPA-G discharge its essential roles and responsibilities as laid down in the Market Rule and the Commercial Code (completed). During this phase, important functions like strategy and market development (including energy and demand forecasting), corporate planning, taxation, ERP, information technology, HR and corporate governance have been added and other main functions like legal and finance have been extensively augmented.

In **Phase-II** of organizational restructuring (that has been initiated with the mobilization of Asian Development Bank's (ADB) consultants in July 2016), the Performance Management System (PMS) is being designed for implementation in-order to comply with the provisions of the approved HR Manual. Furthermore, CPPA-G through an extensive consultative process (as explained under section 5.3 below) will be submitting the Competitive Trading Bilateral Contract Market (CTBCM) Plan to NEPRA by April 2016 for obtaining approval. The plan will entail a proposed market model, once approved by the Authority may require further organizational

restructuring of CPPA-G to discharge the responsibilities as envisaged in the approved market model.

Based on the approval of CTBCM Plan by the Regulator in May or June 2017 and other gaps identified, CPPA-G will perform the necessary restructuring by getting assistance from the consultants.

During Phase-II after the approval of CTBCM Plan, the integrated Business Plan for CPPA-G will be prepared that will entail scope, time and cost of various initiatives that CPPA-G will need to undertake in-order to comply with the Power Market Transition Plan identified initiatives, in addition to other capital and operational requirements. Preparation of the business plan has been initiated with development of the vision, mission, core values and the corporate level objectives. The plan is being prepared through consultative process within CPPA-G and CEO leading its preparation. This Plan will also entail the staffing plan that will be based on the restructuring.

### **3.2- CPPA-G CURRENT FUNCTIONS**

The restructured organization is performing/gearing-up to perform eight major functions segregated into six core and two support functions. The core functions include (i) settlement and billing, (ii) power procurement, (iii) finance, (iv) legal and corporate affairs, (v) strategy and market development, (vi) monitoring and coordination. The support functions include (vii) human resource management and (viii) information technology.

#### **3.2-1. BILLING AND SETTLEMENT- CORE FUNCTION**

The main objectives under this functions are to ensure that (a) meter audits and inspection are carried out as per specified schedule, (b) metering disputes are resolved in timely manner, (c) pre-settlement statements and DISCOs invoices are produced as per timescale in market rules, and (d) ensuring that information for all required reports is readily available each month.

The following main tasks are under this function:

- i. **Meter Readings Management:** Maintaining a database of past meter reads, ensuring the quality of new data, use of that information to validate incoming readings and resolve anomalies in the process.
- ii. **Supplier and NTDC Invoice Verification:** The validation of the supplier invoices, and calculation of the transfer charges based on generation and transmission costs for the DISCOs for the period in accordance with formulas provided by NEPRA.
- iii. **DISCOs and Bulk Consumers Billing:** Preparation and dispatch of bills to consumers using the transfer costs.
- iv. **Meter Audit:** Inspections and audits to ensure that the quality of information received from the meter installations is within operational boundaries.

### 3.2-2. FINANCE – CORE FUNCTION

The main objectives under this functions are to ensure that (a) accurate and complete record is maintained of internal expenditure, (b) suppliers, tax authorities and staff are paid full on-time, (c) complete and accurate record of financial transactions between market participants is maintained, (d) appropriate disbursements are made from Escrow accounts as per Market Rules and also highlighting cash imbalances, (e) where necessary, take appropriate action to collect unpaid debt, (f) manage relationship with auditors and (g) ensure information at month end is ready for reporting purpose.

All financial matters of CPPA, both internal and external will be performed under this function and entails the following tasks:

- i. **Internal Accounting:** This task is concerned with all of the internal finances of CPPA. This will entail preparation of annual budget for CPPA expenses, getting it approved by BOD, accounting for internal expenditure on salaries, accommodation costs, communications and IT etc. Preparation of the annual financial reports and collection of fees are also important activities under this task.
- ii. **Market Accounting:** This relates to maintaining record of all of the external transaction of CPPA. It includes ensuring all tax obligations are properly met by CPPA, preparation of financial reports, evaluation of financial cases for new IPPs and close interaction with the treasury department.
- iii. **Treasury:** This task relates to managing flow of funds through the system and entails monitoring the escrow accounts, issuing payment instructions, pursuing unpaid debts, initiating remedial activities in the case of cash shortfalls and also managing cash surpluses.

### 3.2-3. POWER PROCUREMENT – CORE FUNCTION

The objectives of this functions are to ensure that (a) proposed supplies are viable and economically efficient for the market, (b) the PPAs and the EPAs are drafted in-line with the market rules and (c) the supply contracts comply with the technical, legal and commercial conditions as prescribed in the market rules, the grid code, the commercial code and the relevant licenses.

As per NEPRA (Market Operator Registration, Standards and Procedures) Rules, 2015, rule 2.1(f), the arrangements and stages for the transition of power market to a competitive regime are laid down in Schedule-I. This schedule notes that the current structure of the Pakistani wholesale power market is a Single Buyer Arrangement. It also provides the timelines to transition the market from current state to Single Buyer Plus (2016-2020) and ultimately to Competitive Market Operations (July 2020 thereon).

The role and involvement of CPPA with regards to power procurement in these three phases will change over time. Currently, CPPA is involved in all power procurements (maintaining a central power pool), however, later the bilateral contracts and other mechanisms will be introduced to instill competition in the market, wherein CPPA's role will be limited or enhanced as per the approved market model.

The main tasks envisaged for power procurement function entails:

- i. Procurement of power on behalf of DISCOs.
- ii. Establishing contracts for supply.
- iii. Coordination with PPIB, AEDB, MWP, MoF, Ministry of Law, and other governmental agencies.

#### 3.2-4. LEGAL AND CORPORATE AFFAIRS – CORE FUNCTION

The main objective of this function is to ensure that the (a) CPPA acts within the Market Rules, tax and any other legislations at all times, (b) CPPA and its clients have the maximum legal protection in all its supply contracts and (c) all new supply contracts have explicit provision for novation and or assignment.

Under this function the following main tasks are envisaged to be performed:

- i. Providing service to the other functions of CPPA and representing CPPA in all contractual matters, including drafting new supply contracts with CPPA on behalf of the DISCOs, and novation and or assignment of existing contracts.
- ii. Ensuring compliance of CPPA in relation to financial and legal practices, as well as issues of corporate governance.
- iii. Ensuring that records of all transactions, both internal and external are accurate and complete. Conducting an internal audit on a periodic basis to assure the officers of the Company that all responsibilities and obligations are being complied. Also making these records available for scrutiny by an external auditor appointed by the BOD in accordance with the Market Rules.
- iv. Relationships management with the press, public bodies and institutions, parliament and other stakeholders etc.

#### 3.2-5. STRATEGY AND MARKET DEVELOPMENT – NEW CORE FUNCTION

The main objectives of this function are (a) preparation of the business plan, (b) assist in preparation of a market model and a transition road map and later monitoring, (c) research and document conclusions into the next stage of market reform, with reference to international



practices and (d) analysis of the suggested changes to the market rules from the market participants, with a recommendation to promote or discourage.

Under this function assistance will be provided to the CEO and other senior managers for transition of power market. The main tasks under this function are:

- i. Contribute towards the preparation of the sector towards the next phase of market development. Assistance in preparation of the market model and the road map to implement the market model.
- ii. Monitoring and assistance for implementation of the road map on behalf of CPPA.
- iii. Reporting on the market performance, co-ordinate efforts from all of the operating sections to prepare the annual business plan and assisting in preparation of budgets for CPPA.
- iv. Suggesting and exploiting strategic opportunities of the CPPA.
- v. Energy and Demand aggregation and facilitation in transition of this function to the DISCOs.
- vi. Prepare long term forecast for the basket price based on the power procurement plan.
- vii. Program management and coordination for donor funded projects.
- viii. Assist to take reasonable steps to mitigate the risk of cash shortfalls resulting from seasonal price variation and/or short term tariff imbalances, or in the case of payment default from any party.

#### **3.2-6. MONITORING AND COORDINATION**

This function is responsible for overall monitoring and coordination of the activities of different sections of CPPA. In addition, will maintain liaison with external institutions such as NEPRA, Ministry of Water and Power, Ministry of Finance, DISCOs, GENCOs, NTDC, banks etc. for initially setting up of the rules, procedures and institutional relationship along with the subsequent amendments therein to carry on with market evolution.

#### **3.2-7. HUMAN RESOURCE – SUPPORT FUNCTION**

The objectives of this function are to (a) establish recruitment procedures, (b) maintain records of all staff, (c) establish and maintain grievances and disciplinary procedures, (d) maintain the code of conduct in co-operation from CEO and Directors, (e) monitor and comment on adherence of staff to the CPPA code of conduct, (f) ensure the provision of safe working environment including all equipment other than IT, (g) make training plans and execute them in consultation with management, and (h) continuously look for opportunities to improve the employee's motivation.

The main tasks under this function are the followings:

- i. Looking after general office administration and maintenance, procurement of office supplies.
- ii. Ensuring development of and compliance to company rules HR and administration related rule and procedures and maintenance of office record.
- iii. Recruitment of new staff.
- iv. Health and safety issues and looking after the welfare of the staff.
- v. Conducting training needs assessments, preparing training calendars and coordinating the training function.
- vi. Participate in the organizational restructuring process from HR perspective to ensure that CPPA organizational structure, processes, KPIs and JDs are all aligned over time to facilitate CPPA discharging its role and obligations as specified in Market Rules.
- vii. Continuously look for opportunities and embark on initiatives to improve the morale of the employees.

#### 3.2-8. INFORMATION TECHNOLOGY – SUPPORT FUNCTION

The main objective of this function is to ensure that the (a) business has adequate support for network, application and software issue, (b) implement the IT strategy plan, (c) Select and project manage the selection, design and or development of applications, (d) procure IT equipment to meet business requirements, (e) ensure a disaster recovery plan is in place and (f) ensure data integrity and security.

Under this function the following main tasks are envisaged to be performed:

- i. Procurement and commission of IT hardware and software to support business.
- ii. Lead in preparation of IT strategy aligned with the business strategy and help implement it.
- iii. Prepare and or consolidate the requirement specifications.
- iv. Conduct requirement analysis of IT environment required to support the CPPA in the next phase of market evolution.

Under the current IT strategy of CPPA (which is in-line with the business strategy of the company) the IT infrastructure is being established to ensure that the IT hardware and software are procured to be interoperable and compatible. Currently, CPPA has initiated the process of back-office processes automation through ERP. As a settlement center and future wholesale electricity Market Operator, CPPA is in the process of designing a settlement system (hardware and software) for billing, invoicing and financial transactions. IT strategy and the resulting IT

Plan will ensure that the various IT systems implemented at CPPA are compatible and interoperable.

### 3.3- EXISTING SYSTEMS AND CONTROLS

People and process both are essential elements for a successful organization. In-order to sustain disciplined growth it is essential for an organization to have competent employees and well defined processes and procedures. Well defined processes and procedures have embedded controls.

A system is a combination of process, procedures and controls that once implemented through competent HR, helps to obtain the desired results for an organization. The internal HR capacity of CPPA-G has been discussed under section 2.2 and 2.3 above and the following section elaborates the systems and controls being employed at CPPA-G:

#### 3.3-1. THE PRINCIPAL DOCUMENTS GOVERNING CPPA-G'S OPERATIONS

The effective operationalization of CPPA-G would not have been possible without the presence and adoption of policies, procedures, manuals and proper implementation structures. The CPPA's Articles of Association (**Articles**) and Memorandum of Association (**Memorandum**) were approved in 2009. Together these two documents form the company's constitution, defines the responsibilities of the directors, the kind of business to be undertaken, and the means by which the shareholders exert control over the board of directors. Moreover, the **Market Operator Registration Rules 2015**, provides the legal basis for operation of CPPA-G as Market Operator. The rules also provide the mandate to CPPA-G to facilitate the power market transition.

The next most important document is the **Commercial Code** with the objectives to establish, govern and promote efficient and transparent billing, collection and settlement systems in the single buyer model and promote and enable the development of competitive power market in accordance with the schedule I of the Market Rules. Furthermore, the CPPA-G's **Standard Operating Procedures Document** entails the details of verification, billing, settlement and payment processes. This document entails details of work flow within the organization as well as key responsibilities of each department and its personnel in carrying out the aforementioned processes.

Another main document that CPPA-G prepared and got approved from the Board is the **HR Manual**. This document defines the HR governance of the organization. It covers HR matters from recruitment and selection, pay and allowances, promotion to travel of employees. Likewise, the financial discipline in the organization is established through the CPPA's **Book of Financial Powers** that defines the administrative and financial delegation of Authority for running the business operations. These are the key main documents that have helped swift operationalization of CPPA-G after its separation from NTDC.

With regards to the formal structure within CPPA-G, the **Audit Committee** to the Board of Directors ensures that **internal controls** are well established and are functional. The Audit Committee provides oversight of the financial reporting process, the audit process, the system of internal controls and compliance with laws and regulations.

The committee is mandated to review the results of the audit with management and external auditors, including matters required to be communicated to the committee under generally accepted auditing standards. The committee also considers internal controls and reviews their effectiveness. Moreover, the role of **internal audit** in CPPA-G is to provide independent assurance that the organization's risk management, governance and internal control processes are operating effectively.

### 3.3-2. SYSTEM AUTOMATION AND ENHANCING CONTROLS

The strategy devised at CPPA-G is to (a) **eliminate** inefficient processes, (b) **automate** the back and front office processes to bring-in speed, efficiency and transparency and (c) **outsource** the non-core and or work of temporary nature to stay lean and focused.

The systems (both back and front-office) inherited from CPPA of NTDC were manual; however, necessary checks and balances were created to ensure compliance with business rules and codes. Based on the three pronged strategy mentioned above, CPPA has initiated different projects to automate the systems to bring-in more control and efficiency.

The CPPA's Enterprise Resource Planning (ERP) project resides at the heart of the automation strategy. The other initiatives for automation includes the implementation of System for Settlement (SFS) and its integration with ERP internally and revenue metering system of NTDC, creation of the IT infrastructure to support software applications and up-grading the CPPA-G's website.

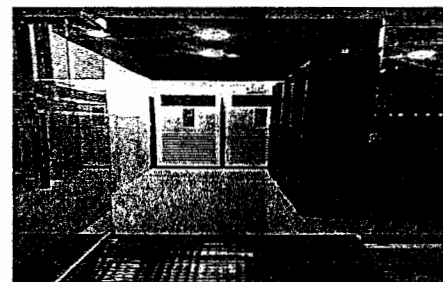
#### 3.3-2.1. ENTERPRISE RESOURCE PLANNING (ERP) SYSTEM

An ERP system is a cross-functional backbone that aids the flow of data and information across the organization for quick decision making while enhancing the control over the processes as well. The modules selected for implementation at CPPA are General Ledger, Payables, Receivables, Cash Management, Assets, Power Purchase Invoice Processing, HR, and payroll. This system will be integrated with other IT initiatives as discussed below.

The implementation of ERP system is in well advanced stage. Apart from the ERP application implementation, the project has four major allied sub-components that includes (a) the creation of Data Center has been completed including room construction, fire protection, environmental control, cooling

,cabling system, security protocol etc. (b) the installation of server and network equipment has been completed in February 2017 including Servers, SAN storage, core switches, routers,

firewalls, racks, virtualization, distribution switches etc. (c) the LAN implementation has also been completed at CPPA-G head office and branch office at ENERCON and (d) the WAN implementation has also been completed between the head office and branch office. The disaster recovery site at CPPA head office has also been completed. The complete ERP system is planned for its Go-live in August 2017.



CPPA's ERP Data Centre

### 3.3-2.2. SYSTEM FOR SETTLEMENT PROJECT (SFS)

As a settlement center and future wholesale electricity market operator, CPPA requires a technically efficient System for Settlement (SFS), which consists of among other components, the computer based hardware and software system. For CPPA-G's SFS will be an accounting based computer model that will produce reports for the conduct of billing, invoicing, collection, dispersal and dispute resolution functions that are required for efficient commercial settlement of wholesale commercial power and electricity transaction throughout Pakistan's wholesale energy market.

Specifically, SFS shall be capable of settling the commercial aspects of export of power by the IPPs and GENCOs, the import of power by the IPPs, GENCOs and NTDC, the sale of power by the IPPs and the quantity supplied of power by the GENCOs. In addition to the computer hardware and software, the SFS shall consist of (a) efficient IT network infrastructure, (b) an appropriate database, (c) a database manager, (d) necessary accounting system and (e) the backup systems to ensure the integrity of the entire meter reading, billing, invoicing and collection process.

The implementation of SFS project was started with commitment from Asian Development Bank (ADB) to provide funding for the project and the technical assistance to implement it. The SFS design consultant team has been selected and it will commence its working with CPPA-G in March 2017.

In parallel, by the end of March 2017 CPPA-G will propose the market model for next phase of the competitive power market. Based on the proposed market model, CPPA-G through its market design team will provide the functional specifications for the SFS system. Besides, in March through May, the SFS consultant team will assess the billing and settlement requirements and prepare the technical specifications based the functional specifications and the need assessment study. These technical specifications will be used to prepare the bidding documents for SFS, which is expected to be floated by mid of 2017.

### 3.3-2.3. THE REVENUE METERING SYSTEM AND INTEGRATION OF IT SYSTEMS

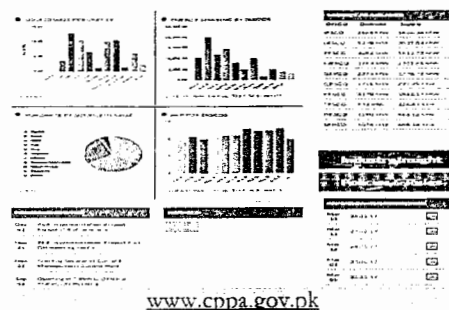
The CPPA-G will be a user of information / data from the Revenue Metering System (RMS) project. The RMS project will be installed, operated and maintained by NTDC through ADBs financing. The revenue metering RMS will entail smart meters, a communication network and head-end to collect and process the data from the meters and provide reports for CPPA-G's use. The implementation of SFS and RMS project along with SCADA upgrade by NTDC is depicted in **Annexure-4**. The annexure elaborates SFS and SCADA & Revenue Metering Projects as two separate projects with interfaces.

Moreover, the integration of ERP, SFS and Revenue Metering System is being done through regular coordination between project teams in the design phase and ensuring provision of interfaces between these systems.

In this regard, CPPA-G and NTDC have signed a document that codifies CPPA-G's SFS Project requirements from NTDC's RMS and SCADA systems.

### 3.3-2.4. REVAMPED WEBSITE

The website of CPPA-G has been revamped and launched with wealth of information for market participants. The new features on the website and market information is one step further towards a transparent market operator.



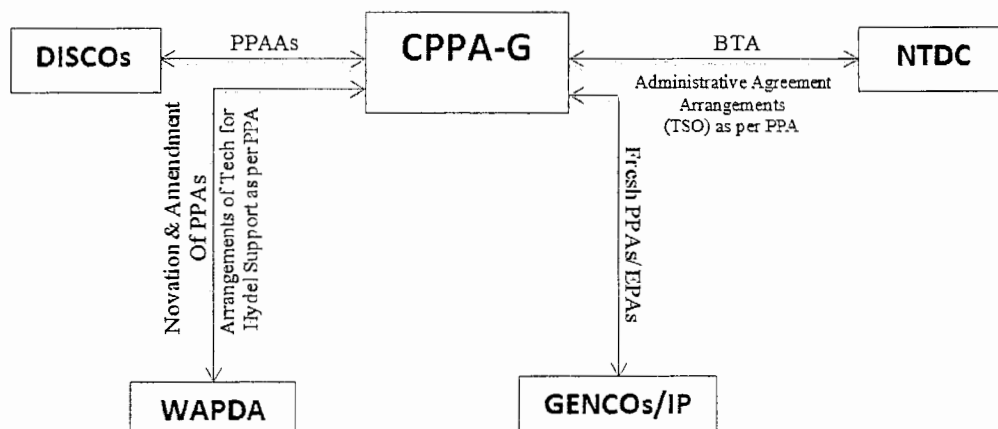
### 3.3-2.5. PERFORMANCE MANAGEMENT SYSTEM (PMS)

The Performance Management System (PMS) is being designed for implementation in-order to comply with the provisions of the approved HR Manual. The PMS will inform the decisions regarding performance based incentives and promotions. The system is being developed and is anticipated to be functional by mid of 2017. The plan is to implement PMS in the ERP once it becomes manually operational and tested.

## 4- EXISTING CONTRACTUAL ARRANGEMENTS

### 4.1- CONTRACTUAL FRAMEWORK

To conduct the market operations under the prevailing market model, CPPA-G has signed some important agreements that codify the relationship of CPPA-G with market participants and service providers. The following diagram depicts overall contractual relationship of CPPA:



### 4.2- CONTRACTUAL ARRANGEMENTS IN PLACE

As per the approved policy of the GOP following contractual framework is currently in place to conduct market operations:

#### Business Transfer Agreement (BTA)

Business Transfer Agreement (BTA) was signed by the National Transmission and Dispatch Company Limited (NTDC) and Central Power Purchasing Agency (Guarantee) Limited (CPPA-G).



G) on June 3, 2015. Both parties contentedly accepted all the decisions of this agreement. Effective date of this agreement was June 30, 2015 with expiry in December 2016.

Under this agreement, two major functions of NTDC; Central Registrar and Power Exchange Administrator (CRPEA) and Competitive Trading Bilateral Contract Market (CTBCM), were spun-out from NTDC and entrusted to CPPA-G. The agreement also covered transfer of market operations, transfer of employees were also made.

In the light of this and other agreements, NEPRA, upon a proposal from NTDC, approved changes in the transmission license.

Following, some relevant pre-closing actions, which have been already completed:

- Change of title of revenue collection account from CPPA to CPPA-G;
- Administration Agreement between CPPA-G and NTDC, duly conferring authority to CPPA-G to administer the PPAs mentioned in schedule-II of BTA;
- Modification of transmission license, excluding market operations activities from NTDC functions;
- Transferring to the CPPA-G of the responsibilities associated with proposing to NEPRA changes or adaptations on the Commercial Code, which should be later approved and notified;
- Signing of Power Procurement Agency Agreement between CPPA-G and each DISCO individually;
- Approval of Securities and Exchange Commission of Pakistan (SECP) for appointment of CPPA-G as a sole agent of the DISCOs
- Registration the CPPA-G with Federal Board of Revenue (FBR) for sale and income taxes purposes.

Following, some important post-actions, which are currently in process, are listed:

- Written confirmation of transferring of physical assets and human resources to carry out market operations;
- Reconciliation of assets, receivable and liabilities including payables at the closing date;
- Audit of account and opening balance sheet for CPPA-G, inclusive of net worth of CPPA-G, which will be used for settlement of accounts between CPPA-G and NTDC as of the closing date;
- Assignments, by way of novation of all or any part of PPA/EPA between CPPA-G and IPPs under policy 2002, 2006 Renewable Energy till the closing date;
- PPA between CPPA-G and WAPDA for its Hydel Power Stations;
- PPA between CPPA-G and all GENCOs, individually, for each of the thermal power plants in operation
- Accrual valuation to determine pension and other liability of transferred employees;
- Reinstallation of NTDC audited accounts after the transfer of market operations undertaking (NTDC);
- Memorandum of transfer of assets, confirmation of third parties to the memorandum of transfer of liabilities

### **Power Procurement Agency Agreement (PPAA)**

The PPAA's were signed between CPPA-G and ten individual DISCOs. These agreements were part of pre-closing action of business transfer agreement (BTA) between NTDC and CPPA-G. The DISCOs having distribution license to provide distribution services, willingly appointed CPPA-G as their agent to procure power and perform the designated commitments on the behalf of distribution companies, on terms and conditions set forth.

CPPA-G performs the roles, responsibilities and functions assigned as market operator under the Market Rules. Since then, CPPA-G has authority to administer PPAs of IPPs under 1994 policy with WAPDA, 2002 policy and new power purchase agreements for procurement of contracted products in the name and on the behalf of DISCOs. The administration is done in accordance with (a) market rules (b) Power Acquisition Program and/or (c) NEPRA approval of any new power purchase agreements (if applicable).

Contents of these agreements are confidential and should not be shared with third party except NEPRA. This agreement cannot be terminated without NEPRA's prior approval. In case of any dispute, which is not covered in market rules, the dispute shall be solved according to section II of NEPRA Act.

### **Reverse Administration Agreement**

The Administration Agreement is entered between CPPA-G and NTDC with respect to portfolio PPAs/EPAs being administered and executed by NTDC up to such moment. In addition to administrative functions, there are technical functions of construction, operation and maintenance of Power Purchaser's Interconnection Facilities and Interconnection Works, telecommunication and metering system, which, under the PPAs/EPAs agreements, are responsibilities of the Power Purchaser under portfolio PPAs/EPAs but are beyond the scope of CPPA-G.

To solve this issue, the CPPA-G entered into an administration agreement with NTDC, to ensure that the functions and obligations of NTDC relating to the Power Purchaser Interconnection Facilities, Power Purchaser Interconnection Works, telecommunication/telemetry/ SCADA protective devices and Metering System, which are within the functions of NTDC, as per its transmission license, are assumed and exercised by NTDC with respect to such Power Purchase Agreements and Energy Purchase Agreements.

The following are the salient features of this contract:

- The PPAs/EPAs shall be jointly managed in accordance with their capacities;
- CPPA-G shall perform all acts and take all decisions with respect to the portfolio PPAs/EPAs;
- NTDC shall continue performing all acts and take all decisions to discharge the obligations with respect to the Portfolio PPAs/EPAs in relation to System Operations, construction and operation of Power Purchaser Interconnection Facilities, Metering & Telecommunication and all other such functions related thereto which are the responsibility of the Power Purchaser under the Portfolio PPAs/EPAs but are beyond the legal and technical capacity of CPPA-G

#### 4.3- POWER PURCHASE AGREEMENTS

In Pakistan, PPAs started with the introduction of private Independent Power Producers (IPPs), building power complexes for the exclusive purpose of selling to WAPDA, the government owned integrated power utility at the time.

Pakistan initiated power sector reform in the 1990s with the restructuring of WAPDA, the enactment of NEPRA Act and the operationalization of the electricity regulator (NEPRA). By 2002-2005, WAPDA successor companies had been created and licensed, thus separating transmission, generation, and distribution and retail supply into different companies. WAPDA became a power company dedicate to hydropower, and no longer responsible or with the right to procure power. A regulatory framework was developed, and NTDC licensed in 2002 with two functions in addition to transmission and system operation functions.

These functions, assigned in the license as transitory arrangements to reflect the change in sector structure and future power market, were: (i) development and implementation of competitive electricity markets, including a contract registrar; and (ii) as WAPDA could no longer be the Buyer in PPAs with new generation, procure power on behalf of the distribution companies created in the restructuring of WAPDA (DISCOs) until the wholesale competition market started commercial operation (expected by 2009, and no later than 2012) when DISCOs would contract and procure power on their own. In this way, the CPPA function in NTDC License introduced a change in the power purchase and market model, where each DISCOs buys power through a representative, which is responsible to negotiate, sign, and administer the billing and settlement functions associated with it.

Consistent with the expected market development, in 2009 CPPA-G was created as a power company to take over the CPPA and market development functions from NTDC, as expected in 2002 NTDC License. The commercial operation of CPPA-G started in mid-2015 when the transfer of functions were formalized and completed between NTDC and CPPA G. The function and scope of authority of CPPA G are regulated by NEPRA Market Operator Rules. CPPA G acts as an agent of DISCOs to procure power on behalf of Discos. Each DISCO signing a Power Purchase Agency Agreement (PPAA) with CPPA G formalized the agent agreement.

The CPPA as an agent of DISCOs to procure power has a very competent technical, legal and finance teams that not only takes part in the development of the agreement but also administers them on behalf-of the DISCOs.

The following table (Table-3) lists the agreements CPPA-G has with market participants and administrators:

Table-3

S. No	Technology /Type	Number of Agreements		
		Commissioned	To-be Commissioned	Total
PPA's/EPA's				
1	Wind	12	10	22
2	Solar	4	2	6
3	Bagasse	5	2	7
4	RFO/Gas/HSD/RLNG	31	6	37
6	Coal	1	9	10
7	Nuclear	4	0	4
8	Hydel	13	8	21
Total		70	37	107
Other Agreements				
9	Administration Agreement	Between CPPA-G and NTDC		
10	PPAAs	Between CPPA-G and DISCOs		

The detailed list of PPAs/EPAs is placed at **Annexure-5**.

#### 4.4- FUTURE ACTIONS AND CONTRACTUAL FRAMEWORK

This sub-section explains the future actions that CPPA has taken to move towards more flexible contracts that will commensurate with the future market model.

##### 4.4-1. THE BIFURCATED PPA'S

As part of the current regulatory framework to govern the restructured power sector, the standards and procedures for the transmission and system operation functions of NTDC, and to enable open access by different Transmission Users (Users) were formalized in the Grid Code (2005 and its later amendments). The Grid Code covers "*all material technical aspects relating to Connection, the Operation and Use of the NTDC's transmission system including the operation of electric lines and electric plants connected to the NTDC's transmission system in so far as relevant to the Operation and Use of NTDC's transmission system*" (Grid Code, Introduction, main objectives). The approved Grid Code assigned also to NTDC the function of metering service provider for Users, establishing NTDC's responsibilities in the installation, maintenance and calibration, reading and validation of commercial metering systems.

The main objectives listed in the Grid Code include also "*facilitate competition in the provision of electric power*". With this objective, the Grid Code recognizes the different separate activities and functions, and Transmission Users (those that connect to the grid to inject or extract energy), to allow for the development of the future electricity markets. Among others, the Grid Code separate and refers to two separate functions of NTDC differentiated as separate departments or units of NTDC: the System Operator (SO) and the Transmission Network Owner (TNO). The Grid Code includes a **Connection Code** to ensure transparency and non-discrimination in the application for, review and approval of connections between a User and NTDC. The Grid Code **requires that a Connection Agreement** be signed between the User and NTDC as a contractual arrangement that, complementing the Grid Code, includes technical details and rights and obligations of the parties (NTDC and the connected or to be connected User).

The regulatory framework in place as from 2005, therefore, separated the contractual agreement for the technical and operational permanent functions of NTDC (Connection Code and the Users becoming Participants of the Grid Code), from power procurement. At this stage, it would have been possible to develop a standardized PPA that covered only commercial provisions.

The PPAs signed during the transition when NTDC was responsible for the CPPA function continued a similar design as WAPDA's, as an integrated transmission, system operator and wholesale power procurement company.

The PPA needs to be based on and recognize the precedence of the higher level regulatory framework, including Commercial Code, Grid Code, and Commercial Code. Provisions in the PPA should oblige both parties to comply with this framework, and clarify that inconsistency between provisions in the PPA and the regulatory framework, the Codes and Rules will prevail.

Consequently, is a good practice to have (a) PPA's bifurcated into commercial and technical parts, with CPPA responsible for the former and NTDC for latter and (b) make these agreements shorter and simpler by giving references to the grid and commercial codes.

Therefore, PPA's bifurcation process is underway and will be completed by April 2017, with the first draft to be circulated amongst the stakeholders for comments.

#### 4.4-2. THE NEW CONTRACTS OPTIONS WITH MARKET EVOLUTION

With the implementation of the CTBCM, the contractual arrangements in the sector will evolve. The exact type of contracts that will exist in the CTBCM cannot be totally defined at this moment, since the CPPA-G is currently working on its conceptual framework (a Market Model Concept Paper has to be submitted to NEPRA in June 2017). Despite this, it is expected that Market Participants may freely decide to agree contracts, which may be of different types:

- **Physical contracts**, in which a purchasing Market Participant (MP) buys and pays for available capacity and commits to buy all the associated energy generated with that capacity ("pay what has been dispatched and injected to the grid"). The contract agrees that the buyer will take and pay what has been generated (all or a share). This design is similar to standard PPAs (or energy purchase agreement - EPAs) as have historically been used in Pakistan.
- **Power supply** contracts where a MP (seller) commits to supply the demand of other MP (purchaser) through its own generation and/or buying it into the market (balancing mechanism). For a generator, this kind of contract disconnects the sale or contracted commitment from the actual energy generated.
- **Fixed quantity power supply contracts**, where a MP agrees selling to other MP an energy schedule independent of actual consumption or generation. The differences are traded in the balancing mechanism. For the selling party, the imbalance for a "market period" will be the difference between actual generation and the energy committed in the contract. For the Buyer, the imbalance will be the difference between actual consumption for the market period and the energy contracted for that period. These

kinds of contracts may include or not contracting capacity, which payments will be subject to availability.

Other type of contracts (physical and/or financial) may be, eventually, be agreed by MP<sup>1</sup>. In any case, the CPPA-G will have to administer them (at least in relation with volumes) in order to produce the settlement and billing. For example:

- Contracts between IPPs and Discos: New PPAs will be established between the Discos and the investors. These contracts may apportion part of the energy produced to specific Discos but not necessarily all of them (future requirements will depend on the individual demand growth of each Disco).
- Contracts between generation companies and BPC. BPC will be allowed to purchase their power from generation companies and/or to independent retailers. Although the contracts will be freely negotiated between these two parties, the CPPA-G will have to administer and settle the differences (balancing)
- Contracts between generators and independent retailers: The CTBCM will allow the possibility of independent retailers will purchase power in order to sell it to BPCs. Balancing of these contracts have to be done through the short term market. Settlement of these contracts will be carried out by the CPPA-G.
- Contracts for importing or exporting power: All contracts for importing/exporting power, despite of the institutions which will be allowed to arrange them, shall be administered and settled by the CPPA-G.

In addition to this, each Market Participant have to sign a contract with the CPPA-G: The Market Participation Agreement. Through this agreement, all the MP are committed to comply with the Grid Code, the Market Rules, the Commercial Code and any other regulation issued by NEPRA in relation with the CTBCM that will be implemented.

## **5- POWER MARKET TRANSITION FACILITATION**

### **5.1 CPPA-G'S UNDERSTANDING OF THE POWER MARKET**

Global transformation of the power industry started at the beginning of the 90<sup>th</sup>, with the restructuring of the power sectors in the UK and Argentina in 1992, although an earlier process had been implemented in Chile about one decade before. In less than 10 years, many countries followed the path, especially in Europe, Latin-America and the US.

In practically all cases this transformation included:

- The unbundling of the generation, transmission and distribution activities;

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<sup>1</sup> The final design of the CTBCM will outline the characteristics of the contracts

- The establishment of an independent regulator, in charge of overseeing the development of the sector, determine the end-user tariffs, solve the disputes, issue standards and instructions, etc.
- The creation of a power market, under very different models and scope, allowing the creation of an environment where the competitive tension takes place.

The **objectives** pursued for such transformation, always included following elements:

- **Security of Supply:** Assure that there is enough capacity, at all times, to supply the existing and future expected demand;
- **Efficiency improvements:** Understanding efficiency in its broader sense, both in the short and long run;
- **Appropriate energy prices:** Provide customers with electricity tariffs at a level which permits the sector sustainability, assuring at the same time they are affordable for the population; and (introduced recently)
- **Progressive de-carbonization of the power industry:** To achieve the compromises associated with Climate Change.
- A fifth element existed also in several developing countries, although not in all, which was to **relieve the Treasury** (TDS, investments, sovereign guarantees) of the burden imposed by the development of the power industry.

The relative weight put in each of these objectives, led to quite different ways of organizing the power markets, in which, in many cases, ideological conceptions were not absent. Broadly narrating, two, quite different, approaches, were followed for market organization:

- **Competition “for” the market.** In this approach, emphasis is put in the security of supply. Developers compete for obtaining long term contracts for power supply, in an organized way. Once these contracts are obtained, they are not exposed to further competitive pressures. In this kind of market (also known as Single Buyer, or Principal Buyer, models) the purchaser (in many cases a governmental entity) takes the volume risks (and, hence, the efficiency objective is somehow diminished), which is later transferred to the end-user customers. This type of models was often used in developing countries, in which the degree of maturity of the sector is not enough to provide investors with enough certainties about the recovery of their investments;
- **Competition “in” the market:** In these cases, emphasis is put in efficiency. Developers compete in the market for selling their products (electricity), either in the short and long run, without any pre-assurance from the demand side that this product will be purchased (other than the contracts they may freely negotiate). The risk is, partially, transferred from the demand side to the offer side. More mature markets tend to follow this approach.

Needless to mention, many organized markets developed hybrid approaches, taking elements from each of these two “pure” models, intending to catch the advantages of each model



minimizing their drawbacks. Also, in many cases, the market evolved from one conceptual approach to the other.

The international experience indicates that the results obtained by implementing such restructuring were quite different. There are cases of remarkable success, but also cases in which the objectives were not achieved (including some cases of significant failure). Learning from these experiences, it is possible to extract some conclusions, which need to be considered while determining the most suitable paths. The lessons learnt show that:

- It is not possible to say that a particular restructuring or model is undoubtedly superior to other. There is no unique, standard, recipe. The particularities of each country, its socio-political environment, the existing structure of the power sector, etc. are so different that it is not possible to apply solutions that performed appropriately in one jurisdiction to another. In fact, some intents to “cutting and paste” successful solutions or models from one country to another had led to important failures.
- The model should follow the objectives. It is important to clearly set up the most important objectives which should be pursued and their priority. Practically never all the objectives can be fully achieved simultaneously and, therefore, it is important to rank them. The final decision about the model shall be totally compatible with this priority ranking.
- As in many cases is not possible to totally restructure the power sector in a single shot, it is necessary, therefore, advance through phases. In these cases, the existence of a road map for implementation is an advantage, provided it is clear, credible and time-bounded. Stakeholders should be aware about how the market will evolve to accommodate them in the most suitable way.
- It is important to establish a political consensus as broad as possible. In this way, changes at a political level will not heavily impact the development of the process. Conceptual changes in the overall design should be avoided as much as practicable, since they create important regulatory uncertainties.
- Despite the effort put in the design of a specific model, adapted to the particular environment, it is not possible to completely avoid eventual undesired outcomes. Therefore, it is necessary, eventually, to produce some changes in the model and/or the established road-map to avoid them. Flexibility in the overall design is important. In this regard, it is important to clearly determine if the undesired outcome is coming, actually, from a flaw in the design (which needs to be corrected) or it is only a matter of time. In many cases, investors are slow to react to incentives, until they are sure the market functions appropriately.

Pakistan has started this transformation process in 1990's:

- The integrated utility, WAPDA, was unbundled into three generation companies, a transmission company and eight distribution companies;
- A regulatory authority was created

- A Single Buyer model was adopted and the institution in charge of its administration (the CPPA-G) created in 2009

It also developed a road map to gradually advance from this single buyer model to a more competitive environment which was part of the NTDC license. However, later these power market transition timelines were revised and are mentioned in Schedule I of the Market Rules 2015 issued by NEPRA.

Under the executive direction from the ECC (April 30, 2015), NEPRA mandated the CPPA-G to propose the characteristics of a competitive trading bilateral contracts market (the CTBCM). The CPPA-G is currently working on this assignment through a consultative process, which is totally consistent taking into account the followings:

- The objectives established by the Government of Pakistan
- The particularities of Pakistani environment, characterized by State ownership of a significant part of the generation sector and practically all the distribution companies
- Lack of enough generation capacity (situation which may revert soon) that requires programmed shortages of an important part of the demand
- A quite inflexible situation, due to the large number of Power Purchase Agreements (PPAs) signed, with sovereign guarantee, which need to be respected
- Important asymmetries among the distribution companies, with some of them suffering for high level of losses and delicate financial situation and
- Rapidly growing demand

As part of this assignment, the CPPA-G has paid a review of several market models established in other countries, trying to extract from them the most important lessons and using this information as an input in the design. Some of the models examined are summarized below.

## 5.2 VARIOUS MARKETS ANALYSIS

CPPA-G along with its consultants have done an extensive research in studying and analyzing various market models in-order to come-up with the proposed model design for Pakistan. This analysis helped to extract from them the most important lessons and inform the model design.

Six market models were analyzed critically that included (a) Turkey, (b) India, (c) U.K, (d) U.S, (e) Spain and (f) Norway power market. The gist of analysis of Turkish market is provided hereunder, while the remaining five markets are discussed under **Annexure-6**.

### The Turkish Power Market

**Need of Competitive Market:** Turkey was a country that hugely relied upon the foreign investments for its economic growth. The Turkish government and banking systems lacked the financial means to support meaningful economic development. The budget deficits swelled and it led to the serious financial crisis in 2001. This financial crisis pushed the investments away from the country including the investments in the power sector. This situation fostered the

liberalization of the power market, seeking for attracting investments and help the stabilization of the sector.

**Evolution:** Turkish Electricity Corporation (TEC) was the vertically integrated utility that was unbundled to form Generation and Transmission Corporation (TEAS) and Distribution Company (TEDAS). TEAS was further unbundled to form Electricity Generation Corporation (EUAS), Turkish Electricity Transmission Company) and TETAS (Turkish Electricity Trade and Contract Corporation). Till 2001, these were the important players of Turkish Electricity Market.

Electricity Market Law was introduced in 2001 which aimed at ensuring the establishment of financially sound, stable and transparent electricity market operating under the competitive environment. After the introduction of this law, the competitive regime in Turkey began to form shape.

By 2009, balancing and settlement applications had launched, day ahead planning and balancing power market had started. Two years later, in 2011, Day Ahead Market was launched. For 4 years, Day Ahead Market functioned in parallel to Balancing Market. Then in 2015, Intra-day Market was also opened for operation.

Till 2015, Market Operator was the part of the system operator. However, in 2015 it was separated and EPIAS, the Market Operator of Turkey, was established. In the same year, TEDAS was divided into 21 separate distribution companies.

**Current Market:** Currently, there is one network and system operator in Turkey. Market Operator is a private and independent entity. There are 21 distribution companies, public and private generators and one regulator in Turkey.

**Structure:** Following organizations are the key players of the power market in Turkey:

**Market Operator:** EPIAS is the Market Operator of Turkey. 30% of the shares of EPIAS are with TEIAS, 30% are with Borsa İstanbul (BIST) and 40% of the shares are with the market participants of Turkey. The major functions of EPIAS include (a) Management of Energy Markets: EPIAS is responsible for the management of the transparent operation of energy market that includes both electricity and gas by operating the power exchange of Turkey. It also provides the counterparty guarantee of all the transactions and (b) Billing and Settlement: EPIAS is responsible for the billing and settlement of the electricity trade in Turkey.

**Regulator:** EMRA is the energy regulator of Turkey. It is an independent entity having financial and administrative autonomy. It is responsible for (a) Issuance of Legislation and Licenses: Being the sole regulator for electricity, EMRA is responsible for issuing the secondary legislation. It also issues the licenses to the market participants, (b) Approval of Tariffs: EMRA approves the design and structure of the tariffs, (c) Supervision of Market: It monitors, supervises and audits the market and market players, (d) Transmission Company: TEIAS is the Turkish Electricity Transmission Corporation and a public entity. Its functions include, (e) Management of Transmission System: TEIAS is responsible for managing Turkish electricity network. It conducts

the operation and maintenance of Turkish Transmission System. It is also responsible for the expansion of transmission network, (f) Projections for Generation Capacity: TEIAS prepares the generation capacity projection and the generation development plan and (g) International Interconnection Studies: Turkey is connected to many of its neighboring countries and it imports and exports electricity through these interconnections. Thus, TEIAS is responsible for the study of international interconnections.

**Distribution Companies:** Although ownership of the distribution assets continued belonging to TEDAS, the operation, maintenance, planning and investment activities were transferred to privately owned companies. For instance, Başkent EDAS is one of the distribution companies in Turkey and was taken into the scope of privatization in 2004. It is a vertically integrated company having businesses of distribution, generation, wholesale optimization and supply retailer. Its functions include (a) Maintenance of 34kV lines: It maintains and operates the 34kV lines of the distribution network and (b) Expansion and Planning of Distribution Network: Besides maintaining, the organization is also involved in the process of planning and the expansion of distribution network. However, the organization does not own any assets and the assets belong to the government.

**Generation Company:** EUAS is the state owned generation corporation. EUAS owns and operates the power generators that haven't been sold to the private companies. Currently, 17% of the generation in Turkey is attributed to EUAS.

**Contracts/Financial Details in the Market:** There were 927 market participants in the Turkish Electricity Market in 2016. The volume of trade in Day Ahead Market and Intraday Market is discussed in the following paragraphs:

- **Day Ahead Market:** As of July 2016, 172.67TWh is the annual total consumption out of which 76.2TWh (44%) is being traded in the Day Ahead Market. The price for the total Day Ahead Market trade is €3.2 Billion which makes the annual average Day Ahead Market price of €41.20/MWh.
- **Intraday Market:** The total Intraday Market Trade Volume is 0.498TWh (0.3%) and it has the price of €22.2 Million.

**Benefits:** Following benefits were achieved after the liberalization of the Turkish Electricity Market:

**Energy Security:** After the introduction of liberalized and transparent market, the private investments in the power sector increased by manifold and no investment required sovereign guarantees from the government as was the case in the previous structure.

**Increased eligible customers:** Turkish Electricity Market is moving towards complete freedom for consumers where all the consumers have the liberty to make bilateral contracts for buying electricity from whichever retail company or generator they choose to. The limit to qualify as eligible consumer was 180MWh/year which has reduced to 3.6MWh/year in 2016 and will be further reduced to zero by 2017.

**Establishment of Payment Discipline:** Before the liberalization and privatization of the distribution companies in Turkey, in some areas, losses due to non-payments were as high as 80%. Non-collection was a prevalent culture. However, after the transition, Turkey has been able to substantially reduce the losses. Currently, the highest losses fall between 40%-50%, which will be reduced further in future.

The remaining five markets are discussed under **Annexure-6**.

### **5.3 TRANSITION PLAN AND THE BUSINESS PLAN**

The Phase-1 (Basic Market Design) has been initiated since August 2016. Under this phase CPPA-G is getting technical assistance from ADB expert's team to develop market development concept paper and then the Competitive Trading Bilateral Contract Market (CTBCM) Plan. These two products will be produced through a consultative process. This phase also entail training sessions for power sector entities professionals to ensure optimal participation in plan development. The CTBCM is planned to be submitted before NEPRA by June 2017 for approval and once approved by the Regulator in June 2017 will form an approved road map for power market transition. The Phase-2 and Phase-3 will be detailed market design and implementation respectively, appropriately timed to ensure that the power market transition timelines as envisaged under Rule 2.1.(f)-Schedule-1 of Market Rules are met.

The CTBCM Plan will determine the shape and form the Pakistani Power Market will take in future. CPPA-G is in the process of also preparing the integrated business plan for CPPA-G that will entail scope, time and cost of various initiatives that CPPA-G will need to undertake in-order to comply with the Power Market Transition Plan identified gaps and or actions.

Development of the business plan will entail developing the vision, mission, core values, the corporate level objectives (which have been completed), scope, schedule and costs of various projects and the operational costs as well.

Apart from CPPA-G, all the market participants and the service providers will also have to include the actions identified under CTBCM Plan into their respective business plans.

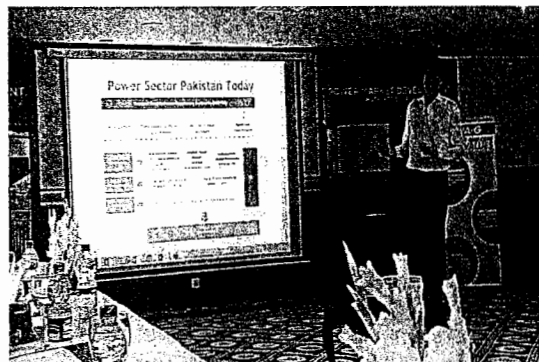
### **5.4 TRANSITION AN INCLUSIVE PROCESS**

CPPA-G is facilitating the transition journey through an inclusive process that entails mainly the capacity building of its own staff and the key market entities, consultations and market coordination that entails hand-holding, coaching and then transition certain important functions such as demand forecasting.

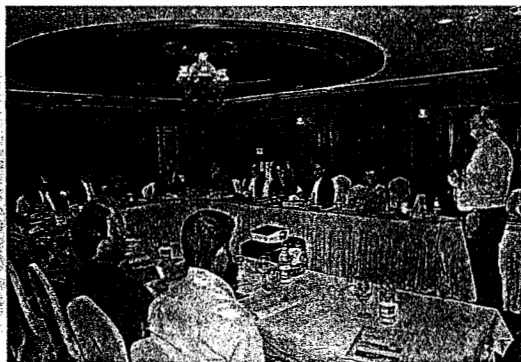
#### **5.4.1 CAPACITY BUILDING**

Series of capacity building sessions on market development were conducted by engaging world class resources. Three intense sessions of trainings on market development were delivered for

participants from NEPRA, NTDC and NPCC, MWP and CPPA-G during November and December 2016. The goal was to train the main stakeholders before the market design being to ensure valuable contribution in the design process.



April 2017: A workshop on competitive power markets organized by CPPA-G



November 2016: Market Development Expert conducting training for power sector participants

Furthermore, delegation participating in this study visit represents the major power sector stakeholders responsible for driving the market development initiative in Pakistan. This visit, with the peer institutions in the Turkish power sector, was intended to provide the participants with real context and dimensions of the Turkish power sector reform - the current functioning of the power market, stakeholders' experience in the changing market, and the direction that the sector has followed thus far, and may be headed – with the hope of being able to transfer some of those lessons back to the process underway in Pakistan.



Ankara Turkey: TEAIS (the TNO of Turkey) Director giving briefing to Pakistani delegation



Istanbul Turkey: EXIST the Market Operator / Exchange of Turkey Hosted Lunch for the delegation

#### 5.4.2 CONSULTATIONS

The goal is smooth transition of power market and consultation is the tool to achieve it. At CPPA we not only believe but have practiced the participative and consultative process during the Phase-1 (Initial Market Model Design) of power market transition. The inclusive strategy entailed, training the major stakeholders on market development (as mentioned above under section 5.3.2 above) and propose the market model by ensuring adequate consultation.

The market model proposed by ADB consultants has been discussed with various stakeholders including NTDC, NPCC, AEDB and DISCOs. Below are the snapshots of a consultative workshop on proposed power market transition model with participants from FESCO, LESCO and PESCO.



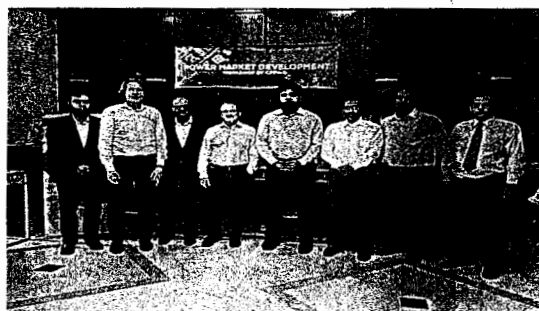
CEO CPPA-G explaining the highlights of the proposed model to DISCOs participants



Manager Strategy and Market Development answering a query of a DISCO participant



Market Model Workshop: CEO CPPA-G presenting Completion Certificate to delegate from NERPA



Market Model Workshop: Participants from K-Electric, NEPRA, DISCOs and NTDC participated

#### 5.4.3 ENERGY AND DEMAND FORECASTING TRANSITION PLAN

CPPA-G procures power on behalf of all government owned DISCOs. The energy and demand forecast is an essential input to inform future power procurement for CPPA-G.

The energy and demand forecasts are produced using two methods (i) bottom-up medium-term forecast (using the Power Market Survey (PMS) Methodology) and (ii) top-down long-term forecast using the econometric model.

The long-term forecast is required for Generation and transmission planning while for sub-station and 11 KV feeders planning at DISCO level, a medium term forecast is required. Moreover, both forecasts are counter-check of each other i.e. also used to check whether the error lies in the permissible range.

In this connection CPPA-G (in the transition period) is not only processing the data provided by DISCOs using a software tool to produce the PMS based forecast but also working on centrally

preparing the long-term forecast. The PMS based forecast is planned to be furnished during April 2017 and the long-term by May 2017.

The forecasts products are (a) energy sale, (b) generation requirement and (c) peak demand, which are then consolidated to form the country level forecast.

Demand ownership and capacity obligation is one of the most important features the new proposed power market model will have. Thus the Demand should prepare the forecasts and shall be accountable to meet it, as already laid down in Distribution Code section DPC 5. Also, as per Grid Code PC 4.1, NTDC is required to prepare a long-term forecast.

Therefore, CPPA-G has prepared a high-level transition plan that address people, process and technology aspects, when implemented in true letter and spirit will enable the DISCOs in-particular to produce the forecasts on their own.

After the transition period of two to three years CPPA-G will continue to (a) do the quality assurance of the data (b) monitoring of the forecasting process and (c) consolidate the forecast on the country level.

In this regard CPPA-G has prepared a plan that will help to regularize electricity demand forecasting in the country and capacity building of DISCOs so that they can produce these forecasts independently and own the forecasts, which is very important for power market transition in the Country.

Both the long-term and medium-term forecasts will be submitted to NEPRA in April 2017 for obtaining regulatory approval.

## **6- BUILDING STRATEGIC PARTNERSHIPS GLOBALLY**

### **6.1 EXIST THE MARKET OPERATOR / EXCHANGE OF TURKEY**

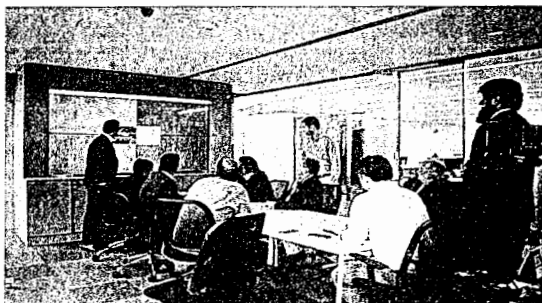
As per Section 12, sub-section 12.i.vii. of the Commercial Code it is required that CPPA-G shall “Liaise with other international bodies having market functions similar to CPPA-G or administering competitive power markets”. In compliance to this requirement, CPPA-G has built a Strategic Partnership with EXIST which is the Market Operator / Power Exchange of Turkey.

This partnership started with the visit of experts from CPPA, NEPRA, MWP and NPCC to meet their counterparts including EXIST in January of 2017. On Request of CPPA-G, a four member delegation of Exist visited CPPA-G office in Islamabad in February 2017 to share the experience and knowledge they have gained during the transition phase. Since then CPPA-G and EXIST are in regular contact and are also collaborating in the areas of mutual interest.

Turkish power market has been reformed with great success since 2001 (the time when the Turkish Market was in doldrums). The market conditions back in 2001 were very similar to



Pakistani market conditions recognized with non-payments and cash flow issues, high losses, long-term generation contracts backed by government sovereign guarantees. Therefore, CPPA-G on its own initiative initiated the international collaboration with Turkish Market Operator.



**Istanbul:** The Pakistani participant from CPPA settled the whole Turkish Market by click of a button using EXIST's Transparency Software Platform



**Islamabad:** EXIST experts giving briefing on Turkish Market's transition to CEO CPPA and Team.

CPPA-G and EXIST are collaborating closely on routine basis on areas on mutual interest, including follow-up discussion and visits to further understand the details of the transition journey in Turkish Power Market and inform the power market design of Pakistan.

## 6.2 MEMBERSHIP OF APEX

Association of Power Exchanges (APEX) is an international association formed to facilitate development and communication of ideas and practices in the operation of global competitive electricity markets. CPPA-G application for full-time membership of Apex as a Market Operator of Pakistan was approved by Apex BOD in early March 2017 (please refer to **Annexure-7** for approval accorded by Apex BOD). Apart from CPPA-g, the association has 47 Full-time members all over the globe from EXIST the Market Operator/Exchange of Turkey to PJM the ISO in United States. It also has three Associate members.

By becoming the member of the association, one of the primary intentions of CPPA is to get access to the Apex platform to exchange knowledge and experiences and contribute more effectively to the development of Power Market in Pakistan in years to come. Every year, APEX holds an international conference that provides members the opportunity to network and gain a better understanding of Electricity Markets worldwide, while learning about the latest developments in Power Exchanges. This year the conference will be held in Brussels, Belgium on October 24-26, 2017 in which CPPA plan to participate.

## 7- AN EXTREMELY PRODUCTIVE YEAR

### Building CPPA's HR Capacity & Restructuring

During the current financial year, the organization has gone through a number of changes. Departments have been revamped and some new units like ERP, Strategy and Market Development have been created that are not only staffed but delivering on full swing. In addition the preparation and approval of HR Manual was also a landmark achievement that helped the

company to attract, recruit, maintain and retain high quality Human Resource from the market. During this period CPPA-G has hired xxx level senior managers, xxx middle managers and xxx Management Trainees. The mix of young and enthusiastic new hires from the market have brought a new energy in the organization and set CPPA on the course to become a world class market operator.

### Space Allocation in the Capital

A building of CPPA-G has now been established and is fully functional in the hub of Islamabad. Earlier, the company faced serious issues when the major part of the organization operated from Lahore and the core Senior Management from Islamabad. The operations of the entire company in the Federal Capital have brought significant improvements in company's operations.



The honorable Secretary Water & Power during Inauguration of CPPA-G

### Income Tax and Sales Tax Registration

Formerly, CPPA being the sub-department of NTDC did not have any separate account for income and sales tax of the organization. Therefore, after the establishment of CPPA-G, it has registered for its income tax and sales tax with Federal Board of Revenue (FBR) as an independent entity.

### Submission of Market Fee and its Approval

CPPA-G prepared and submitted the Market Fee with NEPRA as an Electricity Market Operator. After the due course of hearings and adhering to feedback by the Regulator, the Market Fee was approved by the Regulator in January 2017.



CPPA-G's Market Fee Hearing Session chaired by Chairman NEPRA

### Audits

The audits of the dormant period of CPPA-G were outstanding which were completed in the FY 2015-16. The audits from FY 2008-09 to FY 2013-14 were conducted and financial statements were completed.

### Annual General Meetings

Six (6) Annual General Meetings (AGMs) were pending which were conducted during the last year and the audit accounts were approved.

### Corporate and Legal Affairs

In this regard CPPA-G implemented the decisions of CPPA-G Board, improved the Compliance to Public Sector Companies Corporate Governance Rules, 2013, followed-up on the arbitration proceedings at London Court of International Arbitration (LCIA) and provide necessary inputs to the Counsel on the cases, registered CPPA-G with Federal Board of Revenue (FBR) for Income Tax and Sales Tax, initiated revision of Security package for new EPA/PPA into two

parts i.e. (a) Tripartite Agreement and (b) Bifurcated PPA (Commercial Agreement & Connection Agreement).

#### **CPPA-G for the Sector**

During this productive year CPPA-G has also provided its contribution towards overall development and improvement of the regulatory and policy framework. This includes (a) issuance of Guidelines for Power Procurement by CPPA-G under Legal and Regulatory Framework, (b) furnishing comprehensive proposal pertaining to Integrated Energy Plan (IEP) to USAID accompanied with proposed operational framework to ensure sustainability as well as accuracy with in regime of existing operations of Power Sector, (c) advocating Competitive Bidding regime in NEPRA for Wind and Solar Power Plants Suo- Moto hearing by NEPRA and (e) jointly developed forecasting mechanism along with concomitant rebate on deviations with AEDB for Wind Power Plants.

CPPA-G also actively participated in Grid Code Review Panel Meetings and provided its submissions to the same pertaining to TOR for Grid Code Amendment, Addendum to Grid Code of Wind Power for incorporation of ZVRT, HVRT, Forecasting Mechanism etc. Moreover, comprehensive submission for the development of Energy Sector Carbon Impact Modeling tool to enable its hand shaking with existing operations of power sector as well as to enable long term carbon emissions projections were also made. Furthermore, CPPA-G also provided its comments to NEPRA on Regulation (Net Metering , Competitive Bidding etc.),Tariff, Guidelines and MYT of K-Electric.

#### **Power Procurement on Behalf of DISCOs**

Signing of following agreements for power procurement on behalf of DISCO pursuant to PPAA was another major milestone achieved:

- Five wind power plants EPA & five Direct Agreements (DA) having cumulative capacity of 244.77 MW
- Two EPA & one DA of Solar Power Plant having cumulative capacity of 30 MW
- Three EPA of Bagasse based co-generation power plants with cumulative capacity of 78 MW
- Six PPA of thermal power plants having cumulative capacity of 4285 MW

#### **Gratuity Fund and Contributory Provident Fund (CPF)**

Gratuity Fund and Contributory Provident Fund (CPF) have been established as per the requirement of the HR manual during the FY 2015-16.

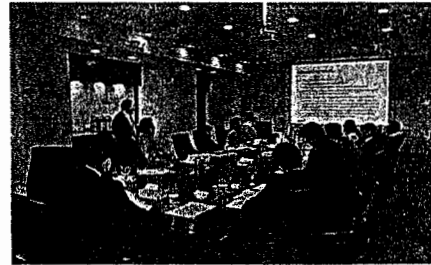
#### **Group Health Insurance**

The process for the health insurance of the employees has been initiated. Group Health Insurance was mandatory under the HR manual of CPPA-G.

### Power Market Development Trainings

Series of capacity building sessions on market development were conducted by engaging world class resources. Three intense sessions of trainings on market development were delivered for participants from NEPRA, NTDC and NPCC, MWP and CPPA-G during November and December 2016.

The goal was to train the main stakeholders before the market design being to ensure valuable contribution in the design process.

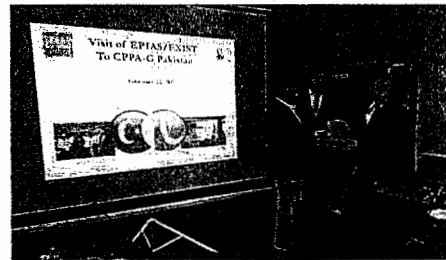


Training on Market Simulation Models conducted in Islamabad

Furthermore, delegation participating in this study visit represents the major power sector stakeholders responsible for driving the market development initiative in Pakistan. This visit, with the peer institutions in the Turkish power sector, was intended to provide the participants with real context and dimensions of the Turkish power sector reform - the current functioning of the power market, stakeholders' experience in the changing market, and the direction that the sector has followed thus far, and may be headed<sup>5</sup>— with the hope of being able to transfer some of those lessons back to the process underway in Pakistan.

### Strategic Partnership with EXIST

CPPA-G has built a Strategic Partnership with EXIST which is the Market Operator / Power Exchange of Turkey. This partnership started with the visit of experts from CPPA, NEPRA, MWP and NPCC to meet their counterparts including EXIST in January of 2017. On Request of CPPA-G, a four member delegation of Exist visited CPPA-G office in Islamabad in February 2017 to share the experience and knowledge they have gained during the transition phase. Since then CPPA-G and EXIST are in regular contact and are also collaborating in the areas of mutual interest.



CEO CPPA presenting a Slovenian to Director Market Operations of EXIST

CPPA-G and EXIST are collaborating closely on routine basis on areas on mutual interest, including follow-up discussion and visits to further understand the details of the transition journey in Turkish Power Market and inform the power market design of Pakistan.

### Membership of APEx

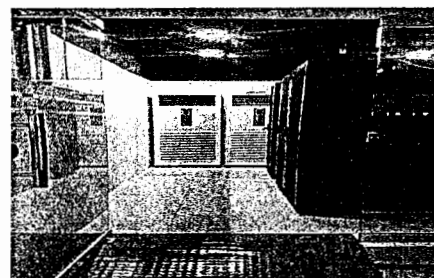
Association of Power Exchanges (APEx) is an international association formed to facilitate development and communication of ideas and practices in the operation of global competitive electricity markets. CPPA-G application for full-time membership of Apex as a Market Operator of Pakistan was approved by Apex BOD in early March 2017. By becoming the member of the association, one of the primary intentions of CPPA



is to get access to the Apex platform to exchange knowledge and experiences and contribute more effectively to the development of Power Market in Pakistan in years to come.

### ERP Implementation

The implementation of ERP system is in well advanced stage. Apart from the ERP application implementation, the project has four major allied sub-components that includes (a) the creation of Data Center has been completed including room construction, fire protection, environmental control, cooling ,cabling system, security protocol etc. (b) the installation of server and network equipment has been completed in February 2017 including Servers, SAN storage, core switches, routers, firewalls, racks, virtualization, distribution switches etc. (c) the LAN implementation has also been completed at CPPA-G head office and branch office at ENERCON and (d) the WAN implementation has also been completed between the head office and branch office. The disaster recovery site at CPPA head office has also been completed. The complete ERP system is planned for its Go-live in August 2017.



CPPA's ERP Data Center

### Energy and Demand Forecasting

In this regard CPPA-G has prepared a plan that will help to regularize electricity demand forecasting in the country and capacity building of DISCOs so that they can produce these forecasts independently and own the forecasts, which is very important for power market transition in the Country.

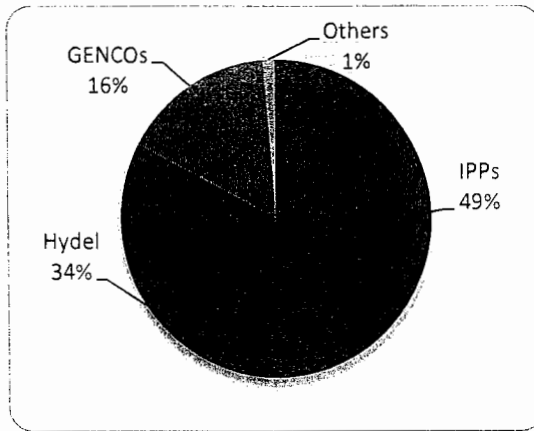
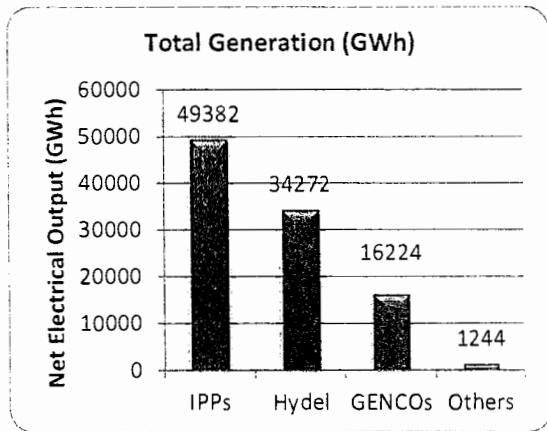
The Medium term forecast has been prepared by DISCOs under guidance of CPPA-G, while the long-term regression based forecast will be prepared in the month of April. Both the long-term and medium-term forecasts will be submitted to NEPRA in May and April 2017, respectively for obtaining regulatory approval.

## 8- MARKET KEY FACTS AND FIGURES FY2016

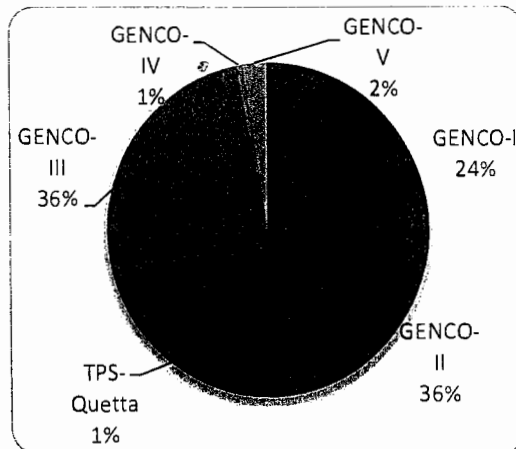
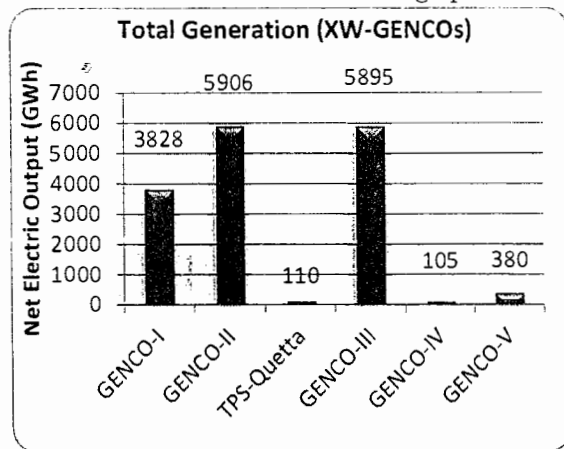
This section provides the information on energy traded in the market and the payments received from and made to the market participants:

### Total Traded Volume (GWh)

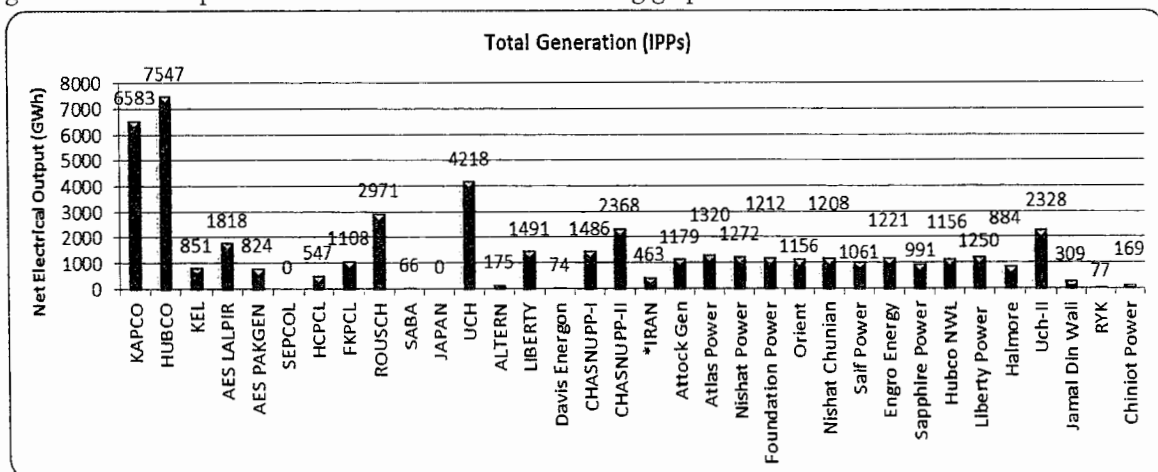
The total traded volume by CPPA-G for FY 2015-16 was 101,122 GWh. Following graph shows the generation through different sources.



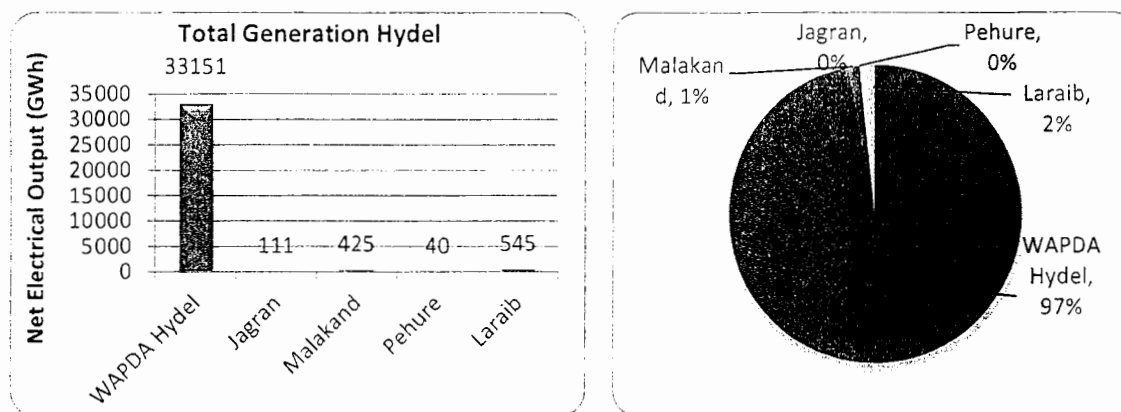
The total generation through GENCOs for the FY 2015-16 has been 16, 224GWh. The distribution has been shown in the graph.



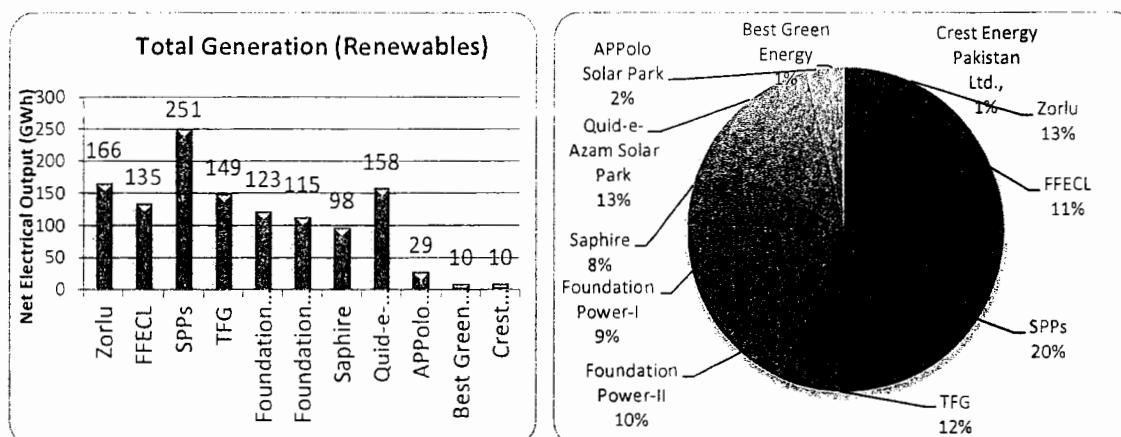
The total generation through IPPs for the FY 2015-16 has been 49382 GWh. The individual generation from plants has been shown in the following graph.



The total generation through IPPs of Hydel for the FY 2015-16 has been 34272GWh. The individual generation has been shown in the following graph.



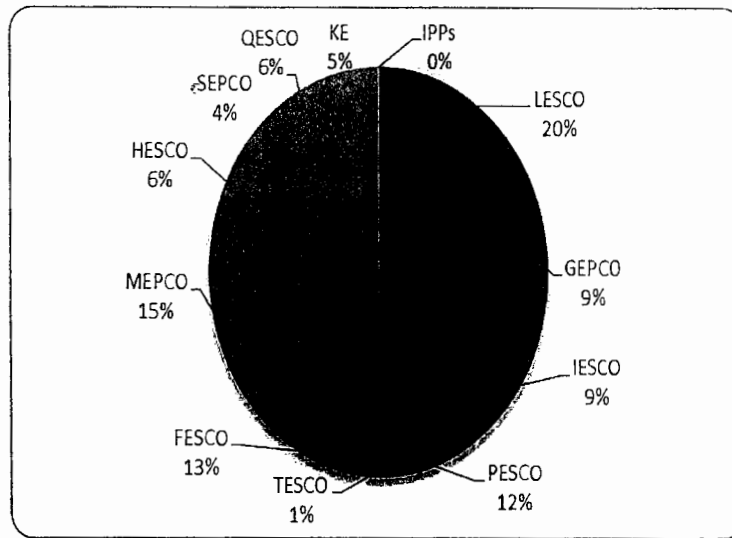
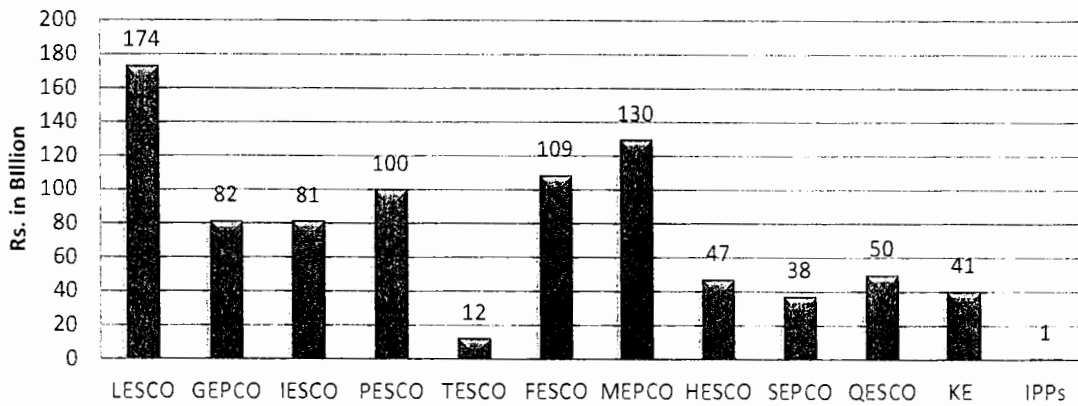
The total generation through other renewables for the FY 2015-16 has been 1243GWh. The individual generation has been shown in the following graph.



### Payments (Million PKR)

A total payment, including capacity and energy payments of PKR 866,064 million has been made by different participants in the FY 2015-16 to CPPA-G. The graph below shows the payments made by the individual DISCOs, KE and IPPs. All figures are in million PKR.

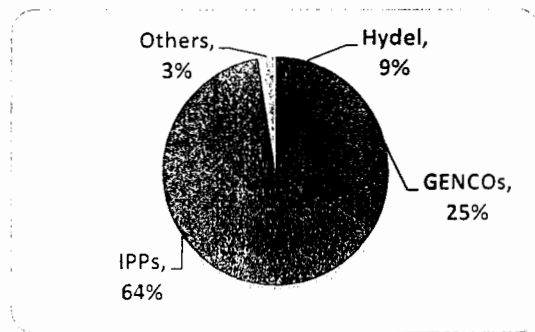
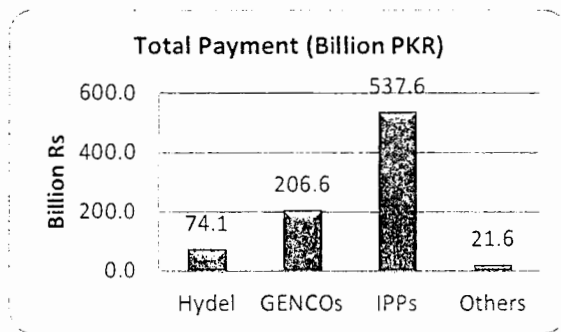
**Break-up of Payment Made FY2016**



**Total Purchase (Million PKR)**

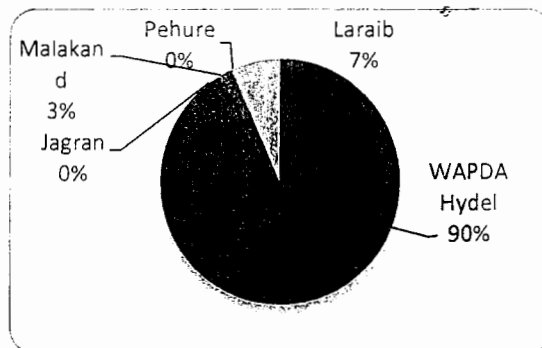
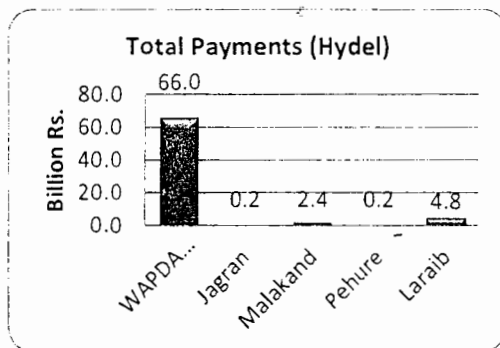
Total power purchase by CPPA-G in FY 2015-16 is 101,122.20 GWh. Total capacity payments and energy payments to purchase this power are PKR 279,664 and PKR 468,560, so that the total amount is approximately PKR 839,925.91 million.





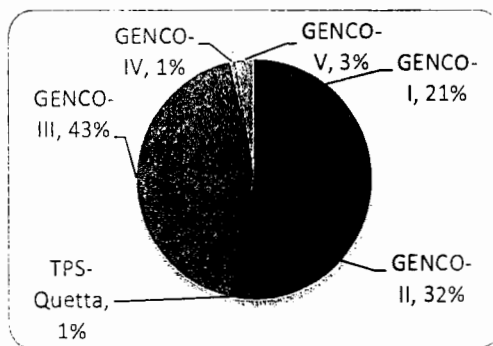
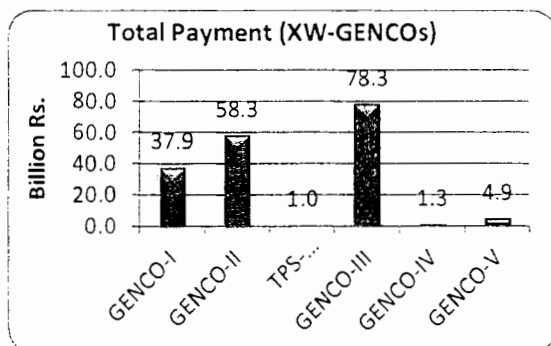
### Hydel:

The total payments made for hydel generation in FY 2015-16 are PKR 73,598 million which includes PKR 3,576 million for energy payments and PKR 70,021 million for capacity payments. The payments made to hydro generators are shown in the graph following the paragraph. All figures in the graph are in Million PKR.



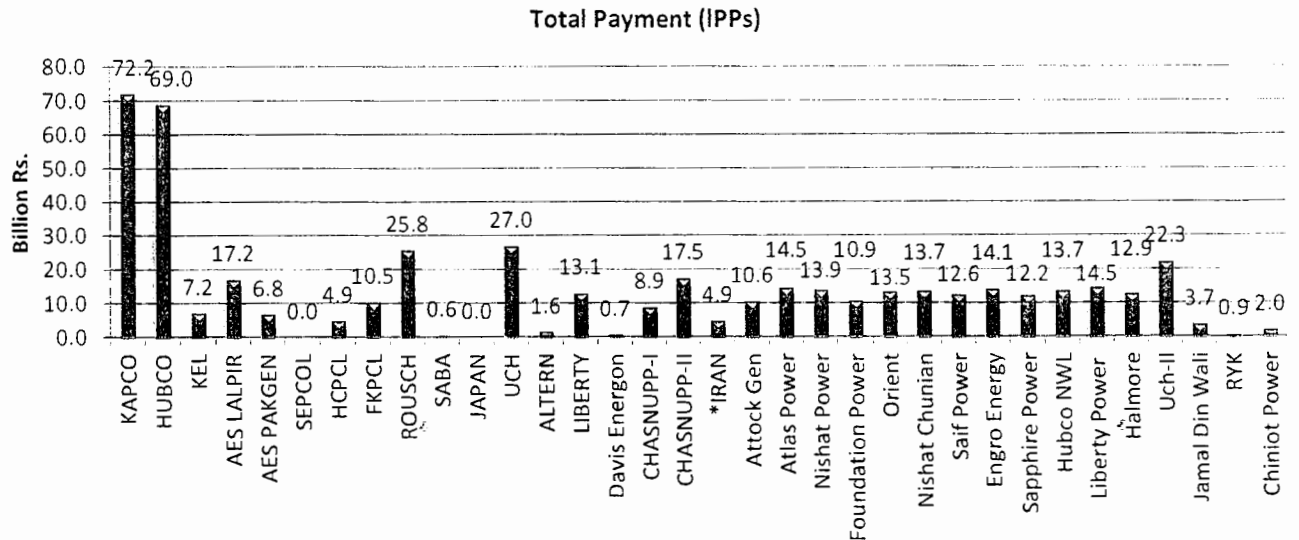
### GENCOs:

The energy payments and capacity payments made to GENCOs are PKR 133,570 million and PKR 48,065 million respectively. The total payments made to GENCOs are PKR 181,635 million. Following graph shows the distribution of payments.



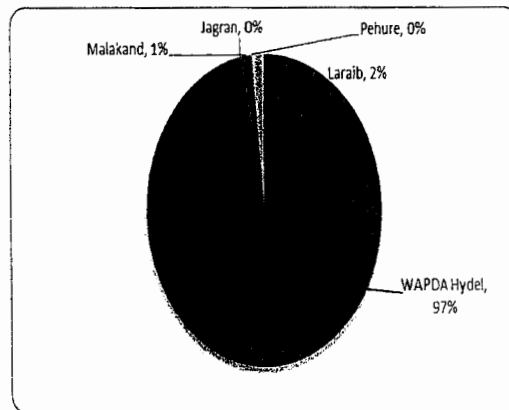
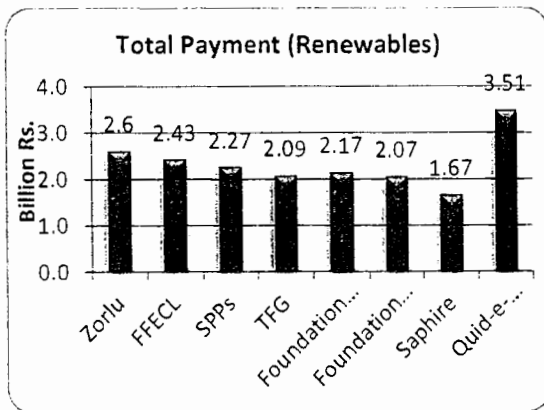
### IPPs:

The total payment made to IPPs in FY 2015-16 is PKR 474,149 million including the capacity payment of PKR 144,919 million and the energy payment of PKR 329,229 million. Other details are in the following graph.



### Renewable Energy:

The total payment made to renewable energy generators is PKR 18,840 million including the capacity payment of PKR 16,657 million and the energy payment of PKR 2,183 million. The payments made to the IPPs have been shown in the graph below:



## 9- MARKET FEE

CPPA-G filed the petition before the Regulator on May 31, 2016 for the determination of its Market Operation Fee pertaining to the period June-15, FY 2015-16, FY 2016-17 consistent with Rule 3 and Sub-Rule 7 of the Tariff Standards & Procedure Rules-1998 (Rules) and in line with the Chapter 11 of the approved Commercial Code by Authority vide letter no. CPPA-G/2016/CEO/1963.

The major components wise break up of revenue requirement included general establishment and administration expenses, repair and maintenance, insurance, depreciation, finance charges and other relevant costs and capital expenses.

The hearing of the petition by the Authority was held on September 20, 2016 at NEPRA Tower Islamabad. After the hearing and further detailed analysis by the Regulator, the fee was allowed for the period June-15, FY 2015-16, FY 2016-17 vide letter No. NEPRA/TRF-366/CPPA-G/2016/198-200 dated January 5, 2017.



CPPA-G's Market Fee Hearing Session  
chaired by Chairman NEPRA



CEO CPPA-G and the Management  
presenting the Market Fee

## 10- PRAYER

In compliance to Rule 3, Sub-Rule (2) of the Market Operator Registration Rules, the Applicant with its address at ENERCON Building G5/2, Islamabad is filling the Registration Application before NEPRA to register as the Market Operator. In view of above submissions, it is respectfully prayed that the Authority may very graciously approve this application to register CPPA-G as the Market Operator of Pakistan Electricity Market.

**ANNEXURES**

**&**

**APPENDICES**

## ANNEXURE - I

## Annexure-1

Detailed CVs of the management of CPPA-G have been enclosed in the following order:

Sr. No.	Designation	Name	CPPA-G Grade	Power Sector Experience
1	Chief Executive Officer	Mr. Abid Latif Lodhi	G- 11	27
2	Chief Financial Officer	Mr. Rihan Akhtar	G-10	17
3	Chief Legal Officer	Mr. Abdul Majid Khan	G-10	23
4	Chief Technical Officer	Mr. Ghulam Murtaza	G-10	34
5	Secretary (BOD)	Mr. Noman Rafiq	G-10	17
6	Deputy General Manager (Finance)	Mr. Muhammad Shabbir	G-10	21
7	Director General (IT)	Mr. Khurshid Alam Pervaiz	G-10	34
8	Deputy General Manager (Tech)	Mr. Mansoor Hussain	G-10	32
9	Deputy General Manager (Tech)	Syed Iqbal Mehdi	G-10	31
10	Director General (HR&A)	Mr. Zafar Javed	G-10	26
11	Deputy General Manager (Finance)	Mr. Haroon Masood	G-10	26
12	Manager Finance	Mr. Muhammad Aslam	G-09	12
13	Manager (ERP)	Mr. Naimat Ullah	G-09	15
14	Manager Corporate Accounts	Mr. Sibtain Tahir	G-09	10
15	Manager Strategy & Market Development	Mr. Omer Haroon Malik, PMP	G-09	15
16	Manager Taxation	Mr. Muhammad Asad	G-09	21
17	Manager (Legal)	Syed Abid Rizvi	G-09	6
18	Manager (Tech) – I	Mr. Nazif Hassan	G-09	29
19	Manager (Tech)- IX	Mr. Javed Aslam	G-09	30
20	Manager (Tech)- IV	Mr. Ajjaz Mohsin Hashmi	G-09	26
21	Manager (Tech) – III	Mr. Zafar Ahmad Sindhu	G-09	30

22	Manager (Tech)- V	Mr. Tariq Nasrullah Malik	G-09	26
23	Manager (Tech)- II	Mr. Saqib Shamim	G-09	24
24	Manager (Tech)- X	Mr. Asher Ali	G-09	25
25	Manager (Tech)- VI	Mr. Mubasher Ahmed Qureshi	G-09	27
26	Manager (Tech)- XI	Mr. Munawar Hussain	G-09	26
27	Manager Operation 1 (IT)	Mr. Aamir Rashid	G-09	34
28	Deputy Manager Development (IT)	Mr. Waqar Hussain	G-09	30
29	Manager Operation 2 (IT)	Mr. Shoukat Ali	G-09	26
30	Manager Development (IT)	Mr. Ather Rasheed Hashmi	G-09	28



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## ABID LATIF LODHI – CHIEF EXECUTIVE OFFICER

### SUMMARY OF QUALIFICATIONS

Mr. Abid Latif Lodhi has diversified professional experience, spanning over 27 years in power and water utilities sector, both in local and international organizations. He has extensive experience concerning policy, regulation, strategic corporate planning, corporate performance, pricing, finance and accounting, fund management, taxation matters, ERP implementation, developing of tariff and financial models both for annual and multiyear tariff, project implementation including development of accounting manual and internal audit manual for all power distribution companies of Pakistan

Currently, he is serving as Chief Executive Officer CPPA-G. Earlier, Mr. Lodhi, in 2015, had completed various tasks for operationalization of Central Power Purchasing Agency Guarantee Limited (CPPA-G) as independent Market Operator for performing the functions of billing, collection, settlement and payment among the market participants.

Before joining CPPA-G, Mr. Abid Latif Lodhi was the Team Lead for Policy, Governance and Regulation at International Resource Group for a project of USAID. In this capacity, he ensured that project resources are matched against the needs of USAID and implementation teams, and identified new ways to achieve efficiency and effectiveness. He was involved in meeting the quarterly revenue target shared with shareholders.

Mr. Lodhi worked at NERPA and was instrumental in finalizing the first tariff determination of all DISCOs, NTDC, WADPA Hydel and GENCOs including the multiyear tariff of K-Electric and Faisalabad Electric Supply Company (FESCO) in 2004.

He also assisted MoWP for preparation of Multiyear Tariff applications of MEPCO and PESCO, preparation of five years integrated generation, transmission and distribution plans including assistance to NEPRA for drafting the Tariff Guidelines (Procedure and methodology) for determination of consumer end tariff 2015 and preparation of standard formats for distribution integrated investment plan.

Using his diverse professional experience and excellent knowledge of the sector, he wrote a book that explained costing and tariff setting in Pakistan that will enlighten the people who intend to excel in the power sector.



**PROFESSIONAL EXPERIENCE****Chief Executive Officer (2016-Present)*****Central Power Purchasing Agency (Guarantee) Limited***

Mr. Abid, as CEO, provides an interface between the board and the employees. He advises the board and formulates policies and provides recommendations to the board. He oversees the operations of the organization including the procurement of electric power, management of cash flow, treasury management and other relevant banking functions for the purposes of collection and disbursement as per the Commercial Code. He also overlooks the matters pertaining to the external relations of the organization and represents CPPA-G in NEPRA hearings and other public platforms. In addition to this, he also deals with the matters relating to the consultants and external aids.

**Partner RASIKH CONSILIUM / (2015-2016)*****Lead Consultant Financial, Policy and Regulation***

He has been engaged on the assignments for CPPA-G, including drafting and working of tariff application for the determination of Market Fee. He also led the preparation of RFP for hiring of a firm for the implementation of ERP. In furtherance to this, he provided technical assistance for the preparation of the template for the Connection Agreement between NTDC and existing public sector GENCOs, new Generation Company, and the existing distribution companies DISCO and also the Connection Agreement between DISCOs and bulk power consumers. He also assisted for the preparation of review motion for the review of tariff by NEPRA for Lakhra Power Generation Company.

**International Resources Group (IRG), Washington, DC (2013-2015)*****Team Lead Policy, Governance and Privatization – USAID PDP***

He successfully completed the sector level Legal and Regulatory Due Diligence reports required by Ministry of Water and Power and Privatization Commission, developed guidelines of tariff methodology and process for the distribution companies of Pakistan's power sector for preparation of annual and multi-year tariff case. He was also engaged in operationalizing the Independent Central Power Purchasing Agency Guarantee Limited, a next step towards the power sector reform in Pakistan, through preparation of the key documents like Business Transfer Agreement, Power Procurement Agency Agreement, Market Operator Registration, Standards and Procedures rules and Commercial Code. He also led the activity for the documentation of existing Standard Operating Procedures in support of the commercial code. In addition to this, he assisted MOWP for amendments of corporate documents and prepared various essential documents required for obtaining the approval of GOP for reform related to CPPA.

Moreover, he assisted NEPRA in the matter for review and approval of Market Operator registration, standards and procedure Rules and Commercial Code, prepared draft of tariff and subsidy policy for the power sector, led the activities on behalf of MOWP for the preparation of five year Integrated Generation, Transmission and Distribution Expansion plan and investment plan in light of power policy 2013. He also facilitated NEPRA team for the preparation of the process for approval of integrated generation, transmission and distribution expansion plan and the investment plan



submitted by distribution companies and developed the mechanism for forward looking fuel price adjustment. He also assisted MOWP by carrying out the spread sheet analysis for tariff differential subsidies to be budgeted.

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**International Resources Group (IRG), Washington, DC**

**(2014 - 2015)**

***Financial Director***

He was responsible for overall financial management and oversight of all project finances including budget, forecasting, accruals, payables and receivables, and other activities that impact the financial performance of the project. Provide direction to DCOP-Ops on impact of procurement and subcontracting priorities on the budget and forecast. He supervised the Finance Manager and Accounting Manager's execution of tasks contained in both job descriptions, maintained a regular review of monthly spend activities and alert DCOP-Ops and PM to any concerns, with mitigation options to remedy, over issues concerning monthly and quarterly targets from previous forecasts, reported to DCOP-Ops any potential areas of concern related to operations spending, effectiveness and oversight of expenditures and adherence to financial requirements established by IRG.

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**International Resources Group (IRG), Washington, DC**

**(2012 - 2013)**

***Team Lead Financial Management***

He was involved in the implementation of ERP in two distribution companies of Pakistan and developed an ERP documentation manual, and provided technical assistant for ERP RFP preparation. Also, revised, redrafted and updated legacy accounting and internal audit manuals for all of the distribution power companies of Pakistan, implemented an internal audit co-sourcing arrangement with an external third party, and trained DISCO internal audit staff on the risk-based audit approach as defined in COSO framework. Moreover, developed a 10 Year Financial Forecast Model for nine distribution companies of Pakistan for its utilization towards business planning, budgeting, tariff determination filing and long range financial forecasting of the company.

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**Lahore Electric Supply Company (LESCO), Lahore, Pakistan**

**(2008 - 2012)**

***Chief Financial Officer (CFO)***

He headed the finance department responsible for managing the entire financial activities of LESCO including budgeting, accounting, cash management, business planning, treasury/fund management, payments, tariff and regulatory activities and taxation matters. Also, he rendered assistance to Chief Executive Officer and Board of Directors on financial and business decision making matters. He successfully implemented ERP system in LESCO and he timely completed the statutory audit and presentation of audited financial statements for approval of BOD. He drafted tariff applications and presented to the Board of Directors and to NEPRA. In addition to this, he got the approval of Operating and Capital Budget from LESCO's BODs and participated in the preparation of Power Purchase Agreements (PPAs). He also assisted GOP in various financial, power sector related matters, dealing with Asian Development Bank (ADB), World Bank (WB), commercial banks and USAID PDIP projects including online processing of withdrawal application of loan through World Bank client connection facility. He actively participated in the process of integration of Oracle Financials with Oracle Human Resource Management (HRM) and billing module i.e. Customer Billing and Information System. Through effective managerial efforts and efficient placement of



transitional funds, he managed to increase profit around three times. He was actively involved in the scrutiny of all business investment proposals from technical (Smart Metering, SCADA, Loss Reduction, STG etc.) to HR capacity building. He briefed various legal counsels on tariff & fuel prices adjustments cases including litigation cases relating to taxation matters and advocated and promoted integrated power planning and energy planning

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**Power & Water Utility Company (MARAFIQ), Saudi Arabia (2004 – 2008)**  
***Head / Specialist Tariff and Regulatory Affairs***

He developed and recommended tariff and regulatory framework for the multi-utilities environment, prepared and presented tariff filings/ reviews for these multi utilities to the satisfaction of the regulator and carried out cost of service studies and worked out tariffs for utilities services for Jubail and Yanbu Industrial Cities; electricity, sea-water for cooling, desalination & process water and waste water management services. In addition to this, he worked out charges for new connections, reconnection, move-in, move-out, theft/ tampering with meter for all the utilities services and also worked out tariff for sales and purchase of electricity between MARAFIQ and Saudi Electric Supply Company and carried out various analysis for centralized utilities complex for Jubail industrial city and worked separately IRR of each service lines and composite IRR for whole of centralized utilities complex. He carried out analysis for Jubail Independent Water and Power Producer (IWPP) and did financial analysis for 2003, 2004, 2005 and 2006 for the area related to tariff and regulatory department of Marafiq in coordination with EY consultants. Also, he prepared and presented five-year businesses plan. He assisted consultants for preparation of process flow charts and business blueprint for the implementation of Business Planning and Simulation (BPS) module of SAP SEM, particularly revenue planning, variable operating expenditure for budgeting and five years business plan. He was also involved in the process of strategy formulation/ review for Marafiq; environmental scanning, internal resource assessment, SWOT analysis, review of mission, objectives, corporate strategies and its translation to strategic objectives along with its cause & effect relationship i.e. strategy map and its ultimate linkage to balance scorecards. He developed the initial draft for corporate performance management system and developed Balanced Scorecards at various responsibility levels such as corporate, 08 functional and 40 departmental levels, consistent with the objectives set for corporate strategies and coordinated with EY consultants for carrying out the financial due diligence for 2003, 2004, 2005 and 2006 for the area related to tariff and regulation.

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**National Electric Power Regulatory Authority (NEPRA) (2003-2004)**  
***Deputy Director Tariff***

He assisted NEPRA Authority in various activities related to tariff determination; evaluated / examined the tariff / pricing cases for generation, transmission and distribution companies from NEPRA during the maiden determinations on restructured power companies' transfer prices, consumer end rates and tariff structure of Pakistan Power Sector. He evaluated annual and multiyear tariff petitions / applications filed by Hydel Power Generation (WAPDA Power Wing), National Transmission and Dispatch Company (NTDC), Gujranwala Electric Power Company (GEPCO), Lahore Electric Supply Company (LESCO) Multan Electric Supply Company (MEPCO), Hyderabad Electric Supply Company (HESCO), Quetta Electric Supply Company (QESCO), Islamabad Electric Supply Company (IESCO) and Peshawar Electric Supply Company (PESCO), Faisalabad Electric



Supply Company (FESCO) and Karachi Electric Supply Company (KESC) and Central Power Generation Company (CPGC), Northern Power Generation Company (NPGC) and Jamshoro Power Company (JPC).

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**National Transmission and Despatch Company Limited (NTDC) (2000-2003)**  
***Manager Finance, Corporate Planning and Control***

He was involved in financial management, strategic planning, budgeting and particularly development of tariff & financial models for strategic decision making and preparation of annual financial accounts and related management reporting schedules and its approval from BODs. He actively participated in the process for issuance of NTDC license, preparation of first tariff petition of NTDC and its presentation to BODs and NEPRA, finalization of invoices & transfer pricing for power sales to distribution companies, and preparation of TOR for the cost of service study conducted by WAPDA for all segments of generation, transmission and distribution. He was involved in the preparation of operating and capital expenditure budget and its approval from BODs, and its monthly reporting to the CEO & BODs, and the arrangement and release of funds against the approved budgetary limits for operation & maintenance and development projects.

As a member of the financial modeling group of Pakistan Electric Power Company, he prepared and presented Financial & Tariff Models to all the stakeholders including World Bank and Policy Committee. He carried out extensive use of financial / tariff models of all distribution companies for determination of financial gaps between cost and tariff, for each of the nine distribution companies, for further incorporation into the working paper presented to policy committee of power sector in Pakistan for the purpose of strategic decision making. He also participated in review of power purchase agreements (PPAs) for generation companies (i.e. NPGC, CPGC, JPC) and in joint review / re-drafting of power purchase agreement including the tariff schedule by NTDC and JPCL and validation of assumptions used for financial analysis. Moreover, he participated in review of energy supply agreements (ESAs) with distribution companies and played a key role in the development and review of system-based draft Power Purchase Agreement (PPA) between Karachi Electric Supply Company (KESC) and NTDC for the committed supply of 450 MW.

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**Water and Power Development Authority (WAPDA) (1989-2000)**  
***Deputy Director, Corporate Planning and Control***

He played a key role in the preparation of all petitions filed by WAPDA to NEPRA for tariff revisions, on consolidated basis, since the inception of the regulatory body. He prepared medium and long term financial forecast i.e. income statement, balance sheet and cash flow statement and interacted with representatives of International Financial Institutions such as IBRD, ADB, etc. on WAPDA's financial matters. He was also involved in the determination of overall and specific cost of production at bus bar and consumer end of all segments (hydro & thermal power generation, power transmission and distribution) of WAPDA, preparation of break-down of electricity tariff for each class of consumers (domestic, commercial, industrial, agricultural and others) for the approval of management and NEPRA, preparation of periodic financial management reports for the authority and Government of Pakistan. Moreover, he worked for the calculation of fuel cost for each thermal powerhouse on the basis of energy sharing, calculation of each Independent Power Producer's (IPPs)



cost for financial projection on the basis of energy sharing i.e. medium and long range energy forecast and the calculation of subsidy provided to different categories of consumers. In addition to this, he prepared opening balance sheets of all DISCOs and he prepared monthly accounts, operating budget, pre-audit of supplier's bills and payments for centrally procured material like transformers, transmission lines, polls, cables etc. for the entire distribution network of WAPDA. He was also involved in the allocation of operating budget to the entire distribution area electricity boards (AEBs) of WAPDA, stock accounts and ledgers and preparation of Loan Disbursement Application for submission to donor agencies.

### EDUCATION

ACMA Cost & Management Accountant, Lahore, Pakistan (FCMA), 1998  
B.Com. University of the Punjab, Lahore, Pakistan

### TRAINING

Trainings on Power Market Structure  
Strategy formulation & its implementation through Balanced Scorecard techniques  
Integrated Energy Modeling for least cost expansion planning for energy infrastructure and

### CERTIFICATIONS

Certified Board of Director, a certification awarded by Risk Metrics USA. The preparatory course was done through Pakistan Institute of Corporate Governance (PICG) affiliated with International Finance Corporation (IFC).



## **RIHAN AKHTAR – CHIEF FINANCE OFFICER**

### **SUMMARY OF QUALIFICATIONS**

Mr. Rihan Akhtar has been working in the power sector of Pakistan for more than 17 years. He has sound knowledge of financial planning and strategy, managing profitability, strategic planning, quality management, process improvement, forecasting and developing budgets. He is currently working as Chief Financial Officer, CPPA-G. During his professional career, he has worked in a number of organizations and proved his worth at various levels. He is involved with Treasury Management; and manages and supervises the cash-flow. He reviews daily cash requirements and takes financial decision. He also monitors the company's cash flow forecasts and manages relationship with DISCOs and banks. In addition to this, he supervises the function of Corporate Accounts including the preparation of monthly, quarterly and annual financial statements.

He had also been involved with the supervision and direction of the activities with the billing and recovery on daily basis, allocation of work and monitoring of the progress of assistants. He ensured the existence of adequate procedures for the timely issuance of Billing and Recovery. Moreover, he supervised the regular reconciliation between the billing and recovery system and financial ledger. He has the experience of processing invoices of projects based on energy delivered and financial implementation of PPA, making payment to IPPs and maintenance of Control Ledgers.

In addition to this, he used to negotiate the financial aspect of the agreements as per the approved power policies. He was involved in the preparation of corporate budget and took initiatives to control expenditures to ensure the alignment with business plan and budget limits. He also ensured compliance with corporate budgetary requirements and guidelines. He planned and developed the corporate long-term strategy in order to materialize the company's vision and objectives. He managed to minimize tax abilities through informed application of tax laws and regulations. He managed tax compliance, reporting, and filing works and he also established appropriate system for tax risk management.

### **PROFESSIONAL EXPERIENCE**

#### **Central Power Purchasing Agency (Guarantee) Limited (CPPAG), Islamabad (2015-Present)**

##### ***Chief Finance Officer***

Major responsibilities include the management of Treasury and Corporate Accounts, Billing and Recovery, Invoicing, and Taxation. Corporate planning control is one of his major jobs and for this, he prepares Corporate Budget and takes initiative to control the expenditures to ensure the alignment with business plan and budget limits. He also ensures the compliance with corporate budgetary requirements and guidelines. He supervises the functions of Corporate Accounts which



includes preparation of financial statements of monthly, quarterly and annually. His contribution in the submission of Market operational fee to NEPRA was unprecedented.

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**National Transmission and Despatch Company Limited, Lahore (2011-2015)**

***Deputy General Manager Finance***

Major responsibilities included the management of Treasury and Corporate Accounts, Billing and Recovery, Invoicing, and Taxation. He was also involved with the cashflow management. He prepared the forecasts and managed the company's relationships with various organizations.

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**WAPDA Power Privatization Organization (WPPO), Lahore (2009-2011)**

***Deputy General Manager Finance***

As DGM Finance, he managed and supervised all aspects of cash flow within the organization and with other generators and DISCOs. Daily responsibilities involved the analysis of daily cash requirements and executed daily financing decisions. He also oversaw the company's various cash flow forecasts and managed relationships with DISCO's and Banks.

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**WAPDA Power Privatization Organization (WPPO), Lahore (2006-2009)**

***Manager Finance***

He managed the payments and invoices of Independent Power Producers (IPPs) as per the Power Policies. He was also responsible for the processing of invoices, and generating demands of funds for the payment. He monitored payments to IPPs and monthly billing & recoveries of DISCOs.

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**Faisalabad Electric Supply Company (FESCO) (2004-2006)**

***Manager Corporate Accounts***

He supervised the preparation of financial statements of the organization and maintained the internal control. In addition to this, he managed the accounts of a company, met deadlines and administered the financial transactions of the organization. He was responsible to analyze accounting data and produced financial reports/statements. He established and enforced proper accounting methods, policies, and principles. He also maintained fiscal files and records to document transactions.

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**WAPDA Power Privatization Organization (WPPO), Lahore (2001-2004)**

***Manager Finance***

His major duties were monthly and daily payments to IPPs and Billing & Recoveries of DISCOs. He managed the activities of billing and recovery on a daily basis, work and monitored individuals for accuracy and also managed the regular reconciliation that was carried out between the billing & recovery system, benefits system, cash receipting and the financial ledger.





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**Stock Exchange, Lahore****(1997-2001)*****Deputy Manager Finance***

His responsibilities during this period were to ensure that the company had the cash and liquidity to meet its obligations, involved in securing credit from banks and other sources, tax, HR and compliance matters. Recommended and maintained the system of policies and procedures that impose an adequate level of control over finance department activities. He was one of the authorized signatories on all financial documents.

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**Textile Industry****(1992-1997)*****Assistant Manager Finance***

He played a vital role in maintaining the financial standing of the company. During this period, he was responsible for determining financial strategy and policy, arrangements of appropriate funds and managed the financial risks in the organization. He maintained daily cash balances, and ensured that cash flows were adequate to allow business units to operate effectively. He forecasted the cash payments and anticipated challenges arising from limited cash flow. He also maintained banking relationships and negotiated loans and merchant services for business units. He also prepared financial reports for annual meetings.

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**EDUCATION**

FCMA Fellow Member of Institute of Cost & Management Accountants of Pakistan, 1992

BSc. Physics and Mathematics, 1988

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**TRAINING**

NEPRA Regulatory Regime, National Electric Power Regulatory Authority, Islamabad, 2007

Management Accounting Techniques, ICMA Pakistan, 2006

How do effective Managers Organize Themselves, Pakistan Institute of Management, 2006

How to Implement Computerized Accounting System, Pakistan Institute of Management, 2005

Using Accounting Information for improved profitability: A Managerial Perspective, Lahore University of Management Science (LUMS), 2005

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**REFERENCES****1. Abid Latif Lodhi**

Email: [abidlodhi786@gmail.com](mailto:abidlodhi786@gmail.com)

CEO, Central Power Purchasing Agency (Guarantee) Limited (CPPA-G)





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2. **Abdul Majid Khan**

Email: amajidk13@gmail.com

CLO, Central Power Purchasing Agency (Guarantee) Limited (CPPA-G)



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## ABDUL MAJID KHAN – CHIEF LEGAL OFFICER

### SUMMARY OF QUALIFICATIONS

Mr. Abdul Majid Khan has extensive professional experience, spanning over 23 years in both public and private power sector, focusing on power and infrastructure project development and financing, negotiation of power purchase and fuel supply agreements, operation and maintenance and turnkey construction contracts and security agreements.

During his professional experience, he worked with PPIB, NTDC, ENGRO and others. He participated and assisted in launching bidding documents for international competitive bidding document for power projects including Request for Proposals(RFP), Draft Contracts, Bid Security Documentation, Performance Guarantees, Consortium Agreements, drafting of technical, financial and legal parameters etc. He also worked on finalizing the standardized security package documents for thermal, hydro and coal-based power projects. He provided legal advisory support involving the variety of issues such as providing legal advice on contractual issues and multiple regulatory and legal aspects; reviewing, drafting, vetting and negotiating new contracts and overseeing and keeping liaison with lawyers, engaged in different arbitrations and litigations in different judicial forums in Pakistan and abroad.

Currently, he is working as chief legal officer of CPPA-G and his major responsibilities include legal opinion on handling legal, corporate and regulatory affairs of CPPA-G involving litigation, arbitration, drafting and vetting of various kinds of agreements including the Energy / Power Purchase Agreements, rules, regulations, and policies, moved either internally or externally. He represents CPPA-G in meetings including energy / power purchase agreements, with NEPRA, and provides legal assistance to the Board and other sections / departments of CPPA for providing advice on legal aspects of operational matters, removes any bottlenecks in preparation and finalization of agreements and provides necessary guidelines for improvement.

### PROFESSIONAL EXPERIENCE

#### Central Power Purchasing Agency (Guarantee) Limited

(2016-Present)

##### *Chief Legal Officer*

He is responsible for rendering legal opinions on legal, corporate and regulatory affairs of CPPA-G. It includes litigation, arbitration, legal opinions, drafting/vetting of various kinds of agreements including the Energy / Power Purchase Agreements, rules, regulations, policies, etc. moved either internally or externally. He participates in the meetings related to energy/power purchase agreements with NEPRA. He also provides legal assistance to the Board and other sections/departments of CPPA on legal aspects of operational matters and prepares and finalizes the agreements and provides necessary guidelines for the improvement.

He performs leading, managing and directing different steps with respect to developing, negotiating and finalizing the energy/power purchase agreements. He is responsible for delegating, assigning,



undertaking different steps, as per approved rules, policies, procedures and agreements required to be carried out to resolve disputes. This amongst others includes routine correspondences with different power generation companies, clarification with running projects, and discussions to resolve issues.

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**National Transmission and Despatch Company Limited (NTDCL) (2014-2016)**

***Legal Advisor***

During this period, he worked on drafting, vetting and negotiating the new Power Purchase Agreements related to the power projects based on different technologies like hydel, thermal and renewables. He gave the legal opinions and advised the company on regulatory and legal issues regarding the administration of contracts.

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**MCB Bank Limited (2012-2013)**

***Group Head- Legal Affairs***

He worked in the corporate investment banking group and standardizing corporate lending documents with reference to mitigating risks by covering the Bank's interest. He provided support to the Institutional Remedial Management Department in relation to recoveries of NPLs which includes but is not limited to assessment of security documents, cases, and strategy along with a cost-benefit assessment. He also assisted the businesses and support functions of the Bank in negotiations with third parties and dispute resolution.

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**Private Power & Infrastructure Board (PPIB) (2007 - 2012)**

***Director Legal***

The range of his duties include overall legal advisory support to PPIB which involves a variety of issues to be dealt with such as providing legal advice on contractual issues and multiple regulatory and legal aspects; reviewing, drafting, vetting and negotiating new contracts and overseeing and keeping liaison with lawyers, engaged in different arbitrations and litigations in different judicial forums in Pakistan and abroad. Also involved in assisting international consultants in preparation and development of standardized security packages for thermal and hydroelectric independent power projects, drafting, negotiating and executing Pre-Qualification Documents, Bank Guarantees, Letter of Interest, Letter of Support, Implementation Agreement including the GOP Guarantee and Power Purchase Agreement, conducting due diligence of financial instruments, common term agreements, facility agreements, direct lenders agreements in connection with the assignments, novations and other securitizations for financing and re-financing of projects, designing, issuing and evaluating Request for Proposals for International Competitive Biddings, carrying out corporate and group review for project financing, taxation and assets/ liabilities structuring, monitoring events of default under the contractual instruments and advising contractual and legal remedies, introducing and implementing infrastructure regulations for the consultancy and EPC contracts with international standards.

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**Exxon Chemical, Engro Chemical Pakistan Limited (2007 - 2007)**

***Senior Legal Advisor***

As the Senior Legal Advisor, his responsibilities included overall corporate and legal advisory support for Engro Chemical Pakistan Limited and also to its subsidiary companies. The work involved a variety of issues to be dealt with such as providing legal advice to the companies on contractual issues and



multiple regulatory and legal aspects concerning the operations of the companies; reviewing, drafting, vetting and negotiating new contracts to be entered into with its contractors, dealers and with various financial institutions; overseeing and keeping liaison with lawyers, engaged in litigations pending before different judicial forums; and advising these group of companies on the issues relating to the compliance with the regulatory framework, legal opinions on internal queries pertaining to corporate, commercial, financial and labour matters. He was also involved in negotiating, drafting and preparing all types of commercial contracts, inter alia, import contracts pertaining to equipment and commodities, sale and supply of goods, services contracts, dealership and distribution agreements, loan agreements and related documentation.

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**National Transmission & Despatch Company Limited (NTDCL) (2004 - 2007)**

***Company Secretary / Legal & Corporate Affairs Director***

As a Legal & Corporate Affairs Director his work involved giving legal opinion and advising the Company on regulatory and legal issues regarding the administration of the Power Purchase Agreement (PPA); drafting, vetting and negotiating new PPA's, MOU's and contracts to be entered into by the Company with new Independent Power Producers; overseeing and keeping liaison with number of lawyers, engaged in litigations pending before different judicial forums in Pakistan; advising the Company on legal issues relating to land acquisition and services matters. He successfully negotiated and finalized Term Finance Agreements with various Financial Institutions and secured loans for the development of projects. As a Company Secretary, he had to ensure the maintenance of full compliance with the provisions of the Companies Ordinance and the Memorandum and Articles of the Company; arrange and prepare with the consultation of the Chairman, meetings of Board of Directors, Annual General Meetings and Extraordinary Meetings and the agenda and other documents thereof and prepare a correct record of proceedings; prepare, approve, sign and seal agreements, leases, legal forms, and other official documents on Company's behalf, when authorized by the Board of Directors.

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**Walker Martineau & Saleem (2004 – 2004)**

***Senior Associate***

He provided legal services to the sponsors of prospective IPPs; drafted agreements and contracts in respect of financial lease agreements; construction contracts and agreements in respect of joint ventures; security documentation (mortgages, hypothecation, pledges etc.); formation of companies and partnerships; drafting of legal notices; and other work incidental thereto. He prepared drafted and formulated pleadings in respect of matters/cases before the High Court and the Federal Services Tribunal.

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**Private Power & Infrastructure Board (PPIB) (2001-2003)**

***Manager Legal***

His responsibilities included providing legal opinion/view to the Projects Section in order to facilitate them in the setting up and running of a power project. And in this respect, he had to advise them on actions to be taken, keeping in view the strict terms and conditions of the agreements, such as Implementation Agreement (IA), Power Purchase Agreement (PPA), Fuel Supply Agreement (FSA), Gas Supply Agreement (GSA) and the Water Use License (WUL), executed between the Government of



Pakistan and the Independent Power Producer (IPP). He was actively involved in the drafting and negotiating the Security Package, which included the IA, PPA, FSA, GSA and WUL. Furthermore, he participated in the drafting of the Pre-Qualification Documents (PQD), and was a Member of the in-house Evaluation Committee, constituted to assess and Pre-Qualify the Statement of Qualification submitted by the sponsors interested in setting up power projects under the new Policy for Power Generation Projects 2002. He assisted and kept liaison with the number of lawyers, engaged in different ICC Arbitrations and litigations in different judicial forums of Pakistan and abroad, involving the Government of Pakistan and the Board. He also provided legal opinions and support to the Administration and Finance Section on various issues involved in the day-to-day matters.

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**Associate Advocate****(1996-2001)*****Cornelius, Lane & Mufti***

During this time, he prepared, drafted and formulated pleadings in respect of matters/cases pending before the High Court (civil matters, banking matters, corporate matters, and writ jurisdiction), the Banking Courts and the Labour Appellate Tribunal. He also conducted research in respect of legal issues and propositions; drafted agreements and contracts in respect of financing (mark-up, morabaha, financial lease agreements, modaraba, and TFCs); agreements pertaining to acquisition of companies through transference of shareholding; agreements in respect of joint ventures; security documentation (mortgages, hypothecation, pledges etc.); registration of documents before the Registrar of Assurances and the Registrar of Companies; formation of companies and partnerships; drafting of legal notices; and other work incidental thereto.

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**Aziz Law Associates****(1994-1996)*****Associate Advocate***

His work involved extensive legal research for preparing court proceedings/litigation matters and assisted in the drafting of pleadings, documentation and reviewing of documents in respect of corporate/commercial matters. He also prepared the cases of civil, labour and those relating to banking and research involved in such cases.

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**EDUCATION**

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LL.M. International Commercial Law University of Nottingham, UK, 1998

LL.B. Punjab Law collage, Lahore, Pakistan, 1990



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**GHULAM MURTAZA- Chief Technical Officer****SUMMARY OF QUALIFICATIONS**

Mr. Murtaza has been working in power sector for more than 34 years. He has worked at WAPDA, various DISCOs and CPPA-G. He has been involved in the Operations and Maintenance of Distribution System as well as Grid System. In addition to this, he has an experience in sales of power. He was assigned the recovery of receivables and was found efficient. Moreover, he served in the Project Management Unit (PMU) of LESCO that dealt in Planning and Procurement, Maintenance and Testing of LV Meters, Operations and Maintenance of 132kV and 11kV systems in distribution network. Being the Project In-charge, he processed the invoices of Energy & Capacity IPPs, carried out Annual Capacity Test (ACT) of IPPs operating under Power Policy 1994 & 2002. He attended the office of the Regulator regarding disputes, petitions; public hearing of revised tariffs, negotiations of EPAs with sellers of upcoming solar, wind, bagasse, and small hydel power plants. He served as a coordinator between NTDCL, DISCOs and IPPs regarding interconnection facilities and approval of design of equipment and other relevant issues. Also, he has liaised with NPCC about verification of despatch given to IPPs in connection with processing of invoices. He has a worthy experience of Management & Administration to deal with subordinate engineer officers and large number of crew working in Distribution Companies at the level of Division, Sub Division and Circle.

**PROFESSIONAL EXPERIENCE****Central Power Purchasing Agency-Guarantee****(2015-Present)*****Deputy GM-I & II (Technical) CPPA-G***

Gets processing and technical verification and accords approval of energy/capacity purchased invoices of IPPs under Power Policy 1994, 2002 and 2006. The verifications are done for all the IPPs based on RFO, Gas, Solar, Wind, Bagasse, Hydel as well as other power plants operating under GENCOs and WAPDA.

Witnesses the operations of the above mentioned plants and makes sure that their operations comply with the laws and agreements. Deals with day-to-day technical matters of these Power Plants as mentioned in the Operating Procedures by holding the meeting of Commercial Operating Committees, constituted for the smooth working relationship between CPPA-G and Power Plants.

He interacts with relevant departments; NEPRA, PPIB, AEDB, MoWP and prepares replies to the assembly questions. He also liaises with System Operator regarding the Despatch given to the IPPs, matters of curtailment and scheduled and un-scheduled maintenance. In addition to this, he negotiates with Renewable Energy Plants regarding EPAs /PPAs, attends meetings on issues pertaining to renewable energy with PPIB/AEDB, gives input to NEPRA regarding revised tariff determination for Renewable Energy i.e. Wind & Solar.



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**Lahore Electric Supply Company.****(2013-2015)*****Manager / SE GSO***

He has served as Manager Grid System Operation in LESCO, supervised the 132kV and 66kV Grid Stations, 2500km transmission line and 132kV private Grid Stations. He also tested and energized new Grid Stations that were completed by G.S.C Directorate. He supervised the monitoring and testing of the Common Delivery Points installed at the incoming side of 132kV (LESCO side). He managed and supervised about 2400 employees and officers working in the GSO circle periodically; yearly, six monthly. He maintained the equipment in operation, as per schedule, for the smooth and un-interrupted supply in accordance with the SOP and carried out Load Management within the jurisdiction of LESCO through Power Distribution Control (PDC) Centre, according to the demand as well as quota of generation allocated to LESCO.

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**Lahore Electric Supply Company (LESCO)****(2013-2014)*****SE/Manager Operation***

He worked as SE Manager Operation in eastern circle, Shalimar, which consisted of 4 Operation Divisions and 19 Sub-Divisions. He made efforts and achieved goals, to control technical and administrative line losses as per KPI's established by the company. The target of recovery of receivables was achieved by taking the measures to the tune of disconnection of supply of defaulter consumers. He liaised with PDC, GSO, for the uninterrupted supply of electricity as well as the load management. He operated the customer services center for the smooth supply of electricity and resolved the billing complaints and took special measures to stop the pilferage of electricity in the interest of company by establishing. Also, he followed and attended litigation cases with Civil Courts and Wafaqi Mohtasib Directorate.

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**Lahore Electric Supply Company (LESCO) /CE (Development)****(2012-2013)*****Manager Planning & Survey/ Manger Procurement***

He collected data through survey of future load growth by taking the existing and coming load from the field formation and then developed a future plan for establishing new Grid Stations and Transmission lines. He planned the utilization of the funds lent by ADB, World Bank and USAID by proposing the projects of Grid Stations and Transmission Lines to be executed under next five years plan. By having next year demand of material from P.D (GSC) and GSO the coming year procurement plan (Foreign & Local) were prepared & processed for procurement after getting mature.



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**Lahore Electric Supply Company (LESCO)****(2006-2011)*****X.E.N / Deputy Manager***

He worked in Operation Division Dedalpur having 3 sub-divisions and in various operation divisions of LESCO and he succeeded to achieve the goals of reduction in line losses as well as recovery of receivables as per the targets assigned by LESCO's top Management. Also, he made successful efforts to control the theft of electricity within the divisional jurisdiction. He served at diverse positions including D.D (Technical), DM (Tech M&T) and DM (OP). During the service as DM (M&T), he also carried out the surveillance/testing of industrial meters. In addition to it, he has an administrative experience of holding a large number of working crew under the Operation Division and never failed to achieve the performance indicators.

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**Lahore Electric Supply Company (LESCO)****(2000-2006)*****S.D.O / AM (Operation)***

He was responsible for Operation & Maintenance of Distribution Systems of sub divisions. He established one window Customer Service Centre in the sub division for prompt resolution of consumer complaints. During this period, a large number of new applications of connections were processed and granted the connections according to the commercial procedure. For recovery of arrears, special teams were entrusted the duties and successfully achieved the targets. He had also closely liaise with revenue offices for prompt billing and feeding the necessary data of the customers of new connections, DCO's, ERO's and other necessary adjustments.

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**Multan Electric Power Company (MEPCO)****(1983-1999)*****S.D.O / AM (Operation)***

He served as the Assistant Store Officer and was responsible to receive the material from regional store and issuing and release as per requisition submitted by the Sub Divisions. As S.D.O (Operation), worked in different Operation Sub Divisions and performed with best level efforts to arrest theft of electricity by utilizing all available resources. He developed close coordination with Local Civil Administration and Police authorities to monitor and watch difficult consumers & remote areas to make system as efficient as possible. Also, was involved in the annual maintenance of distribution network that was scheduled and carried out regularly. Responsible for correct reading, billing and delivery of electricity bills to consumers and ensuring the recovery of receivables. Responsible to supply the necessary reading data and meter reading list on daily basis according to the meter reading cycle to Computer Centre through Revenue office as per the issued schedule. He resolved the disputed billing cases as well as the litigation cases by arranging out of court settlements, but defended the unsettled cases in Civil Courts, High Court with Wafaqi Mohtasib Courts vigorously and watching the interest of Department.

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**GSO WAPDA****(1982-1983)**





### ***AE (Maintenance) 500kv (GSO) Multan***

He served as AE (Maintenance) at GSO WAPDA and was responsible for the maintenance of equipment installed at 500kV Grid Station. The testing of equipment was carried out according to a schedule of maintenance with the help of maintenance crew. As AE (Maintenance), under (SS&T) Division Sahiwal, he was responsible and worked to carry out the maintenance of the equipment's installed at 26 different Grid Stations under the jurisdiction of SS&T Division Sahiwal. Also, he was liable for replacement of defective/obsolete equipment at any Grid Station reported by the concerned R.E, and AET of the Sub Division. He succeeded to discharge responsibilities to maintain/check of the Batteries/Battery Charger of every Grid Station by visiting periodically as per schedules approved by the Senior Engineer. He successfully dismantled 11kV panels from PakPatan Grid station and installed & commissioned at 66kV temporary Grid Station Luddon/Vehari as a special assignment assigned by the then Chairman WAPDA to X.E.N (SS&T) Sahiwal. He always gave a prompt response to attend any emergency at any Grid Station within the jurisdiction along with the maintenance crew and helped for restoration of electricity supply by attending the fault during round the clock.

## **EDUCATION**

B.Sc. Engineering Electrical (Power) University of Engineering & Technology, Lahore, Pakistan  
Master in Business Administration (Executive). Al-Kher University Lahore Campus

## **TRAINING**

Induction Course, WAPDA Engineering Academy Faisalabad, 1987  
Junior Management Course, WAPDA Engineering Academy Faisalabad, 1995  
Middle Management Course, Staff College Islamabad, 2011  
Sector Specific Training, WAPDA Academy, Faisalabad  
Professional Development Training (Project Management), Asian Institute of Technology, Thailand, 2012  
Senior Management Course, WAPDA Engineering Academy Faisalabad, 2013  
Technical Refresher Course, WAPDA Engineering Academy Faisalabad, 2013  
Executive Safety Leadership Workshop, USAID, 2014

## **REFERENCES**

1. Rehman Maqbool



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General Manager (Planning), NTDCL

**2. Abdul Rehman**

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Cell #: +92 335 7401201  
General Manager (S.D) NTDCL  
COO CPPA-G

**3. Muhammad Iqbal**

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Cell #: +92 333 4466381  
Director Mining  
Ministry of Gas & Petroleum



## NOMAN RAFIQ – COMPANY SECRETARY

### SUMMARY OF QUALIFICATIONS

Mr. Noman Rafiq is working as Company Secretary of CPPA-G and has an extensive working experience working in corporate governance implementation in the public sector companies and has been implementing and maintaining compliance with corporate laws and procedures. He has demonstrated experience and sound knowledge of Generally Accepted Accounting Principles (GAAP) and International Financial Reporting Standards (IFRS), and sound internal controls. In addition to this, he has an experience in Financial Management, Risk Management, Investment Planning and Project Management, designing and developing internal control environment. He also has an experience in the implementation of different Accounting Software and Customized ERP Systems with the knowledge of system controls.

He has worked effectively within the organization to meet goals throughout his professional career. With excellent interpersonal skills, and proven experience of working at different levels and multiple departments, he is proficient and performs well under pressure. He is familiar with the financial and project progress reporting requirements of World Bank, Asian Development Bank, UNDP and other donor agencies.

### PROFESSIONAL EXPERIENCE

#### Central Power Purchasing Agency (Guarantee)

(2015-Present)

##### *Company Secretary*

Responsible for ensuring the integrity of the governance framework, efficient administration of the company, ensuring compliance with statutory and regulatory requirements and implementing decisions made by the Board of Directors. He assists CEO to implement the decisions of the Board of Directors, serves as an advisor to the company Directors, liaise with lawyers, auditors, tax advisors and shareholders on governance issues, attend and record minutes of directors' and members' meeting and ensure compliance obligations under relevant laws and the requirements of regulatory authorities are met. He maintains statutory books and registers, such as, register of members, register of directors, minutes' books of general meetings and of directors meetings; ensures good corporate governance practices in the organization. He prepares and files various statutory returns required under the Companies Ordinance 1984 Act as the Secretary to the Commercial Code Review Panel (CCRP). In addition to this, he issues notices of the meetings of the Panel; represents the panel on various forums, records minutes of the meetings and represents CCRP before NEPRA. He also provides support to the CEO in his functions. He prepares and runs presentations for the board and keeps proper filing records of all personal files of the corporate, taxation and correspondence with the directors.



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**Energy Conservation Fund (ECF)****(2009-2015)*****Chief Financial Officer & Company Secretary***

He managed corporate, secretarial and administrative matters of the company, remained conversant with the provisions of the Companies Ordinance 1984, kept abreast of legal interpretation. He maintained statutory books and registers, such as, register of members, register of directors, minutes books of general meetings and of directors meetings and ensuring that the Companies legal responsibilities under the Companies Ordinance 1984 and other statutes and by-laws are correctly fulfilled and full compliance maintained with the memorandum and articles of the company. Moreover, he followed up for the strategic decisions of the Board of Directors, ensuring good corporate governance practices in the organization, preparing and filing various statutory returns required under the Companies Ordinance 1984. He coordinated with the Legal Counsel of the company on all the legal matters related to the preparation of presentations for the Board, delegations, stakeholders meetings and workshops.

He was the member of the Management team for policy formulation and implementation of various energy conservation and energy efficiency initiatives also contributed to the energy conservation and energy efficiency plan submitted to Ministry of Water and Power. Exploring various EE and EC opportunities and present the same to the Board for approval and follow-up execution.

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**China Town (Pvt) Ltd.****(2008-2009)*****Director Finance & Accounts***

He oversaw all financial operations and direct corporate financial planning and structure, coordinated, analyzed and reported the financial performance to Management and Board of Directors (financial performance, projections and other special projects as required). He prepared short and long-term financial forecasts of financial performance for use with internal management and external parties. Also, he developed, implemented and maintained accounting and administrative policies and procedures for a wide-ranging set of activities including financial accounting and reporting, employee relations (hiring/terminating policies) and other corporate policies. He ensured that sufficient funds are available to meet ongoing operational and capital investment requirements and maintained banking relationships and arranged for equity and debt financing; invest funds, engaged in ongoing cost reduction analyses in all areas of the company, reviewed the performance of competitors and reported on key issues to management. He interpreted the company's financial results to management and recommended improvement activities and assisted in the determination of product pricing in relation to features offered and competitor pricing.



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**Metro (Pvt) Ltd****(2007-2008)*****Chief Financial Officer***

He was involved in the implementation of internal controls and customized ERP solutions. He designed and developed financial and customized inventory management system for the company needs. In addition to this, he managed the finance and investments of the organization. He developed and implemented the Internal Control & Documentation Procedures. He advised the management during business and strategic planning meetings. He provided capacity building support to accounting staff and management on all financial matters and conducted periodic assessments and forecasts of organization's financial performance against budget, financial and operational goals. He ensured that all financial information and accounting procedures respond to the reporting expectations of the management and developed long-term forecasts, models and maintained long-term financial plans.

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**Ace Quality Group of Companies****(2001-2006)*****General Manager Finance and Company Secretary***

He managed the corporate affairs of the Company as per Companies Ordinance. He arranged Board of Directors and Member meetings. Also, he submitted statutory returns with Securities and Exchange Commission of Pakistan. He maintained statutory registers of Members, Directors, officers, minute books of BoD and Members and kept proper records of all corporate affairs, legal matters, agreements with various parties and employees personal files. Also, he guided the management on various corporate affairs and handled all relevant correspondence.

He computerized the book keeping, costing, budgeting, payroll, establishing and monitoring financial controls. He handled all Income Tax, Corporate, Sales Tax and Federal Excise Duty matters of the company and directors. He liaised with banks and leasing companies for the arrangement of working capital and other facilities for the company at very competitive rates.

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**Dar Int'l (Pvt) Ltd****(2000-2001)*****Manager Finance***

He looked after computerized book keeping, taxation and corporate affairs of the company, costing, budgeting and payroll management. He was the part of the management team for market expansion and strategic growth policies. He liaised with banks and leasing companies. He maintained cash flows Statements, notes to the Accounts. He was involved with the verification and validation of day-to-day accounting and procurement activities and filing of Income Tax and Sales Tax returns and maintenance of Sales tax records under the law.

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**EDUCATION**

MBA (Finance) Hamdard University, Karachi,

BSc. Commerce University of Punjab, Lahore



CA-Foundation Exam Institute of Chartered Accountants Pakistan

## TRAINING

“Financial Management in Public Sector Organizations” Lahore  
“International Conference on Microfinance” Islamabad  
“Withholding Taxes laws and rules” Islamabad  
“Islamic Banking Growth in Pakistan” Islamabad  
“Advanced Excel and Financial Modeling” Islamabad  
“Corporate Governance for the Public Sector entities”, Islamabad  
“Public Private Partnerships Success” Islamabad  
“Micro financing institutions in Pakistan” Islamabad  
“Clean Development Mechanism (CDM) projects lifecycle” Islamabad  
“Project management fundamentals” Islamabad  
“Organizational Change Management” Islamabad  
“Risk Evaluation and Management” Islamabad  
“International Conference on promoting Renewable energy and energy efficiency resources” Islamabad  
“Green Economy Consultation” Islamabad  
“Conference on Clean, Affordable and Reliable Energy” Islamabad  
“Fund Raising Techniques and methodologies” AGRA, India  
“Promoting Green Buildings in the World” Singapore  
‘World Energy Council (WEC)’ and ‘Building Research Establishment (BRE)’ London, United Kingdom  
International Conference on Energy Efficient Lighting, Jakarta - Indonesia  
International Conference on efficient lighting standards, Manila – Philippines  
International Conference on efficient lighting standards, Kuala Lumpur – Malaysia  
Global Energy Education and Training Program, KEMCO, Seoul - Korea

## CERTIFICATIONS

Institute of Corporate Secretaries of Pakistan– Associate Member

## REFERENCES

1. **Mr. Faridullah Khan**  
Civil Servant (Grade-22)  
Ex- MD ENERCON / ECF
2. **Mr. Sohail Akbar Shah**



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Civil Servant (Grade-21)  
Ex- MD ENERCON / ECF

- 3. Mr. Amjad Nazir**  
Retired Civil Servant (Grade-22)  
Ex- MD ENERCON / ECF



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**MUHAMMAD SHABBIR – DEPUTY GENERAL MANAGER FINANCE****SUMMARY OF QUALIFICATIONS**

Mr. Muhammad Shabbir has 21 years of exceptional experience in the finance part of power sector. During his professional tenure, he worked with WPPO and CPPAG. He is an expert of the finance side of coal power projects, thermal and hydel projects. He actively participated in the development of Power Policy 2002. He also explored tariff on the basis of Built, Own, Operate (BOO) and Built, Own, Operate and transfer (BOOT) and reviewed Tariff and Financial Proposals of Independent Power Producers (IPPs) being implemented pursuant to Energy Policy 2002 by the Govt. of Pakistan i.e. Thermal and Hydel. He actively participated in development of Transmission Policy for development of Projects in Private sector. His major work involves the tariff determination of different power and transmission projects.

Currently, he is responsible for the finance portion of development of Coal base power projects; review of the feasibility studies of IPPs of Thermal and Hydel Power Projects, negotiation of Power Purchase Agreements and relating amendments of HUBCO, Liberty Power, import of power from Iran and leasing of Lakhra Power Company etc, maintaining bank relations with both local and foreign banks involving the payments of over Rs 1.5 billion per month.

He assists both internal and external Legal Counsels in the interpretation of the Power Purchase Agreement and Implementation Agreement related to complex tariff matters. He supervises, checks, and processes the Energy and Capacity Payments to HUBCO, Altern Energy, Liberty Power, Jamshoro Power Company, Lakhra Power Company and Central Power Generation Company. He also handles the development Phase up to Commercial Operation Date (COD) of all Hydel Power Projects in Private Sector as an IPP under Power Policies 1995 and 2002.

**PROFESSIONAL EXPERIENCE****Central Power Purchasing Agency (Guarantee) Limited (CPPAG), Islamabad (2016-Present)**  
***Deputy General Manager Finance***

He is responsible for the financial aspect of the development of Coal base power projects. He reviews the feasibility studies of IPPs of Thermal and Hydel Power Projects. He negotiates the Power Purchase Agreements and relating amendments of HUBCO, Liberty Power, and import of power from Iran and the lease of Lakhra Power Company etc. He maintains the bank relations with both local and foreign Banks involving payments of over Rs. 1.5 billion per month. He supervises checks and processes of Energy and Capacity Payments to HUBCO, Altern Energy, Liberty Power, Jamshoro Power Company, Lakhra Power Company and Central Power Generation Company. He also handles the development Phase up to Commercial Operation Date (COD) of all Hydel Power Projects in Private Sector as an IPP under Power Policies 1995 and





2002 i.e. Laraib Energy, Patrind Hydro Power Project, Sehra Hydro Power Project, Sukhi Kinari Hydro Power Project etc.

**WAPDA Power Privatization Organization (WPPO), Lahore Pakistan (2014-2016)**

***Deputy General Manager Finance***

He was responsible for negotiating coal based power plants i.e. Sahiwal, Port Qasim and Sindh Engro etc and was in charge for all financial aspects including Electricity Tariff i.e. Capacity & Energy Purchase Price. He analysed tariff on the basis of BOO and BOOT and reviewed Tariff and Financial Proposals of IPPs being implemented pursuant to Energy Policy 2002 by the Govt. of Pakistan i.e. Thermal and Hydel. He actively participated in the development of Transmission Policy for development of Projects in Private sector. He was also a team member and represented NTDC for developing Power Policy 2015 and Transmission Policy 2015.

**WAPDA Power Privatization Organization (WPPO), Lahore Pakistan (2003-2014)**

***Director Finance***

He was the Team Leader for Commercial Part of the development of  $\pm 660$  HVDC T/L on BOOT basis from Matiari to Lahore. He participated from the side of Finance to negotiate a Tariff for supply of 74 MW electricity by TAVANIR in June 2011 and 1000 MW in May 2012. He was responsible for the preparation of Coal fired PPA on imported and on indigenous coal under Power Policy 2002.

**WAPDA Power Privatization Organization (WPPO), Lahore Pakistan (1995-2003)**

***Deputy Director Finance***

During this duration, he assisted Punjab Power Development Company for the preparation and filing of Tariff for Pakpattan, Marala, Deg outfall and Chianwali small hydel projects and developed the RFP for 130MW Taunsa Hydro Power Projects. He was responsible for negotiation, dealing and finalization of the development of Power Purchase Agreements (PPAs) with IPPs being implemented pursuant to Energy Policy 1994, 1995 and 2002 and evaluated the financial, legal and commercial aspects.

## EDUCATION

M.B.A (Finance)	University of Punjab, Lahore, Pakistan, 2001
LL. B (Law)	University of Punjab, Lahore, Pakistan, 1994
M.A (Economics)	University of Punjab, Lahore, Pakistan, 1985

## TRAINING

Public Finance and Competency Management, Global Training Consulting, England, 2012  
Introduction of Electricity Regulatory Environment Framework, Lahore University of Management Sciences (LUMS), 2005  
Audit, National Institute of Public Administration (NIPA), Lahore, 2004  
Senior Management Course, WAPDA Administrative Staff College, 2010  
Middle Management Course, WAPDA Staff College, Islamabad, 2003



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Junior Management Course, WAPDA Accounts Training Institute, Lahore, 1994

### REFERENCES

**1. Mr. Ehsan-ul-Majeed Khan**

Tel: +92 300-444 0474

General Manager (Projects), Punjab Power Development Company, Lahore

**2. Syed Hasnain Haider**

Tel: +92 300-8244890

Chief Executive Officer, Laraib Energy Ltd, Islamabad



## **KHURSHID ALAM PERVAZ – DIRECTOR GENERAL (IT)**

### **SUMMARY OF QUALIFICATIONS**

Mr. Khurshid Alam is a motivated, dedicated, and qualified and seasoned IT management professional having 34 years of extensive experience of IT operations, governance, budgeting and planning, strategy formulation and IT related procurements. Twenty two years of experience at largest public power sector IT Company, WAPDA and Eleven years of experience at senior management positions at CPPA-G. Hands-on experience of enforcing controls for IT applications, operations and infrastructure, technical vetting for IT hardware and software, preparing bidding documents and procurement of PCs, high-end servers, related IT equipment and maintenance contracts.

His area of expertise are IT strategy planning, operations and infrastructure management, process improvement and quality management, Team and people management and Team and self-development. His Technical capabilities involved VAX-Alpha HP high end computing servers, Assembly, COBOL, Fortran, Windows XP, 2000/2003/2008 /2012, Open VMS Microsoft office (word, power point, excel).

Currently, as Director General (IT) of CPPAG he manages all divisions, departments, and CEO, CPPA-G on all IT related matters, Development of IT strategic plans in line with CPPA-G business objectives, Planning and directing implementation, development and operations of IT infrastructure at CPPA-G and participating in the strategic planning processes, Compilation of metering data of all common delivery points (CDP), purchase data (CPP+EPP) of all Power Produces, and calculation of transfer charges like capacity transfer rate (CTR) and energy transfer rate (ETR) in accordance with NEPRA provided Mechanism.

### **PROFESSIONAL EXPERIENCE**

#### **Central Power Purchasing Agency (Guarantee) Limited, (CPPA-G) Islamabad (2015-Present)** ***Director General (IT)***

Currently, as Director General (IT) of CPPAG he manages all divisions, departments, and CEO, CPPA-G on all IT related matters, development of IT strategic plans in line with CPPA-G business objectives, Planning and directing implementation, development and operations of IT infrastructure at CPPA-G and participating in the strategic planning processes, He compiles the metering data of all common delivery points (CDP), purchase data (CPP+EPP) of all Power Produces, and calculation of transfer charges like capacity transfer rate (CTR) and energy transfer rate (ETR) in accordance with NEPRA provided mechanism.

#### **Central Power Purchasing Agency (Guarantee) Limited, (CPPA-G) Islamabad (2010-2015)** ***Additional Director General (IT)***



He was responsible for the preparation of monthly energy export invoices to DISCOs and KESC, monthly back feed invoices to IPPs under Power Policy 2002, delayed payment invoices to DISCOs and KESC, and liquidated damages invoices due to delay in RCOD, true-up invoices at the year-end after reconciliation of Energy with all DISCOs and KESC, and capacity and energy charges with all Power Generating companies. He also prepared all types of MIS Reports for PEPCO, NTDCL, NEPRA, MoW&P etc and entertained all queries raised by DISCOs regarding Monthly Energy Export Invoices, questions raised during Assembly/Senate sessions, NEPRA hearings particularly Monthly Public Hearing on fuel price adjustment (FPA), and meetings at Ministry of Water & Power.

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**National Transmission and Dispatch Company (NTDC), Lahore (2005-2010)**

***Director (IT)***

He coordinated with internal, Government, Commercial, NEPRA and GST Auditors, and kept liaison with all formations dealing with CPPA-G. He was responsible for maintenance of billing history file and exercise financial powers as drawing and disbursing Officer at CPPA-G.

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**WAPDA Computer Center HQrs (WCC), WAPDA House Lahore (1996-2005)**

***Director (Technical)***

During this period, he directed General Manager (GM) and Director General, WAPDA Computer Center (WCC) HQrs. on all IT related and other technical matters. He prepared and maintained plan for computer systems, information required and to be produced and technical specifications. He vetted technical and centralized procurement of IT hardware(s) and software(s) for all WAPDA formations. He was also responsible for the preparation of tender documents, maintenance and purchase contracts and material inspection teams. He also supervised and managed bids and financial evaluation committees.

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**WAPDA Computer Center HQrs (WCC), WAPDA House Lahore (1987-1996)**

***Deputy Director (Technical)/Technical Officer***

He was responsible for the procurement, installation and maintenance of high-end computing servers (IBM-System 4300, VAX and Digital Alpha Servers) at machine rooms across DISCO's for bill printing and MIS reporting. Also, he monitored and controlled machine room, key punch and data control sections at WCC, HQrs. , management of WCC HQrs. Store, Transport section and Payroll system was also his responsibility.

He led data network design, installation and operations at WCC HQrs. and across WAPDA formations including WAPDA House, Lahore, WAPDA Engineering Academy (WEA) Faisalabad, WAPDA Staff College (WSC), Islamabad etc. He assessed needs and organizing of computer related trainings of WCC (HQrs.) and other officers at WAPDA House, Lahore.



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**WAPDA Computer Center (WCC), Gujranwala****(1982-1987)*****Programmer/Analyst***

During this tenure, he planned and developed computer programs, and analyzed requirements, prepared work flow and diagrams followed by development in COBOL for billing and MIS reporting requirements. He performed program operation by conducting tests, modifying program sequence and/or codes. With this, he also coordinated with local computer centers for the transfer and implementation of modified billing modules for smooth billing operations. He also supervised computer operations (data entry, data control and coordination) for accurate bills.

**EDUCATION**

M.Sc. Physics      University of Punjab, Lahore, 1981  
B.Sc. Physics      University of Punjab, Lahore, 1978

**TRAINING**

Middle Management, WAPDA Staff College, Lahore  
Senior Management, WAPDA Staff College, Lahore

**CERTIFICATIONS**

Certification in ASSEMBLY  
Certification in COBOL  
Certification in FORTRAN



## **MANSOOR HUSSAIN – DEPUTY GENERAL MANAGER (TECHNICAL)**

### **SUMMARY OF QUALIFICATIONS**

Mr. Mansoor Hussain has 32 years of experience working in different formations of WAPDA, PEPCO and NTDCL. He had started his career at 800 MW Hydel Power Station, Mangla where he served for 5 years. He was responsible for monitoring the plant parameters and the proper start-up and shutdown of the plant units and the issuance of trouble reports. He worked diligently and meticulously. He had also served in the protection and instrumentation section where his responsibilities included the testing and calibration of meters, gauges and all types of protection relays.

Taking into account his hard work, he was transferred to Thermal Power station Muzaffargarh with a promotion where he served for 9 years in shifts and for another 8 years as Instrumentation Engineer. Also, he worked there as Assistant Resident Engineer for 3 years and later as a Plant Manager for 1 year. He was also involved in the work for the procurement of local and foreign spares, maintained stock in store and arranged for routine as well as forced outages of the plant.

In WPPO, he was looking after KAPCO cell. He has been processing EPP, CPP, PLAC and other invoices. He was also involved in the discussions and resolution of issues. As DGM, he has been dealing with Coal and Nuclear projects. This included negotiations on PPA, co-ordination with design, protection, planning and telecom sections. He is looking after IPPs such as HUBCO, PakGen, Lalpir, Davis and Chashma. In CPPA, he assists GM and other high-ups in the implementation of company's initiatives and plans. He coordinates with GM and CEO in negotiation with upcoming IPPs, MOW&P and PPIB etc. He was the member of negotiation team of PPA with M/s Lucky Electric Power and M/s Siddiqsons. Currently, he is dealing with IPPs on coal fuel on behalf of CPPA-G.

### **PROFESSIONAL EXPERIENCE**

**Central Power Purchasing Agency (Guarantee) Limited (CPPAG)**

**(2016-Present)**

#### ***Deputy General Manager (Technical)***

He deals with the projects on imported coal, indigenous coal and Nuclear Power Plants on behalf of CPPA-G. Besides coal and nuclear projects, deals about running the IPPs; KAPCO, HUBCO, Chashma, PakGen, Lalpir and Davis. He also coordinates with the IPPs of coal project for the finalization of PPA, erection and commissioning of plant regarding design, protection and planning sections. Also, he witnesses the Factory Assessment Test (FAT) of Auxiliary Transformer of M/S Port Qasim Electric Power Company.

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**WAPDA Power Privatization Organization**

**(2014-2016)**

***Manager Technical-II.***

He checked and verified the processes of EPP, CPP, OCC, PLAC, late payments, HSFO-LSFO price differential and other invoices submitted by M/S KAPCO. He dealt with KAPCO regarding the technical matters that are observed and faced. In addition to this, he made the arrangements of the calibration of meters ADC tests. He was involved in the discussions in Operating Committee regarding the disputes with KAPCO.

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**Thermal Power Station, Muzaffargarh**

**(2013-2014)**

***Plant Manager (Operation)***

He ensured the smooth operation of the plant by keeping all parameters within limit including SFC, heat rate and efficiency, which were maintained for the optimum economical dispatch. He was carried out start-up and shut down of the plants. He maintained the statistics of running hour, shut down hour, forced outage generation and auxiliary consumption.

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**Thermal Power Station, Muzaffargarh**

**(2010-2013)**

***Assistant Resident Engineer***

He monitored the condition of the plant on daily basis. He diagnosed faults and took remedial measures. Also, he prepared annual maintenance and major overhauling schedule and noted day-to-day progress and took immediate measure in case of a short coming observed. He maintained the inventory for spares of plant which were procured from local tenders as well as through International Competitive Bidding (ICB).

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**Thermal Power Station, Muzaffargarh**

**(2002-2010)**

***Senior Engineer I&C***

He maintained the instruments and control system installed at the power plant. It included the supervision of repairing and maintenance of all the meters, gauges, relays, transmitters and control system. He monitored and maintained DCS, FSSS and DEH systems installed at plant. Looked after overhauling of the power plant.

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**Thermal Power Station, Muzaffargarh**

**(1993-2002)**

***Senior Shift Engineer***

He was responsible for the operation of 3x210 MW Steam Units; looked after the start-up and shutdown of the plant, operated the plant efficiently and kept within the limits. He issued trouble reports and work permits after providing the due protections.

**Hydel Power Station, Mangla**

(1984-1993)

**Junior Engineer**

He performed shift duties for five years, supervised the maintenance of the plant. He worked as a Junior Protection and Instrumentation Engineer and was responsible for testing and calibration of meters, gauges and protection relays.

**EDUCATION**

BSc Electrical Engineering, UET, Lahore, 1983

FSc Government College, Sargodha, 1978

Matric P.A.F Model High School, Sargodha, 1975

**TRAINING**

Junior Management Course, Distribution Training Center, Lahore, 1993

PLC Course, W.E.A, Faisalabad, 2002

Middle Management Course, W.A.S.C, Islamabad, 2011

Refresher Course, W.E.A, Faisalabad, 2011

Senior Management Course, W.A.S.C, Islamabad, 2015

13<sup>th</sup> Technical Refresher Course for SEs, W.E.A, Faisalabad, 2015

**REFERENCES****1. Sohail Ahmed**

Email: [sohail@hubpower.com](mailto:sohail@hubpower.com)

Tel: 03002440150

Senior Manager Operations Hub Power Generation Company

**2. Muhammad Arshad Saqib**

Email: [muhammad.arshad@kapco.com.pk](mailto:muhammad.arshad@kapco.com.pk)

Tel: 03026963133

**3. Ghulam Murtaza**

Email [murtazadhuddi@hotmail.com](mailto:murtazadhuddi@hotmail.com)

Tel: 03226878292

Director Civil CCC Wapda



## SYED IQBAL MEHDI - DEPUTY GENERAL MANAGER TECHNICAL

### SUMMARY OF QUALIFICATIONS

Mr. Iqbal Mehdi has 31 years of progressive experience in Power System, which includes, Project Management of WAPDA project, Operation and Maintenance of Hydel Power Station, Electrical Network Management also Energy Supply Management Nationally/Internationally and Project & Contract Management of Power Plants in Private sector (Hydel/Thermal, Coal-R-LNG IPP's).

He possesses vast experience of 19 years of Electrical Network Management, Energy Supply, monitoring power system Real Time operations, such as management of energy requirement of the country, dispatching, transmission operations, power scheduling, resource planning & system reliability functions Nationally/Internationally.

As an in-charge of LDC/NPCC, he was responsible for managing and monitoring power system Real Time operations, such as management of energy requirement of the country, dispatching, transmission operations, power scheduling, resource planning & system reliability functions. Important function was for integrated power management systems that let to improve the reliability and System security of electrical system while also increasing the financial and operational efficiency of Power System.

Another assignment was improving security against physical damage, and control system vulnerability. Preparation of Operation Procedures for enhancing the electric power systems ability to plan, prevent, detect, respond, and restore system facilities in emergency situations.

Economic Dispatching and Scheduling Generation to Minimize Cost was the basic function of NPCC. Worked on Power System Security Static Security Assessment, Dynamic Security Assessment, Security Constrained Optimal Power Flow.

He has about 10 years of experience as Junior and Senior Engineer of Hydel Power Station working in the field Project, Operation and Maintenance of Hydel power plants. He has experience in project activities including review of tender documents, Evaluation of bids Technically/Financially, Monitoring site activities including contractor progress, quality standards, Installation / testing /commissioning of Generators, H.V. Unit Transformers, Circuit Breakers and other Switchyard equipment, QC functions in the workplace for QC matters at Tarbela Power Plant. Day to day safe and efficient operation & maintenance of Tarbela power plant of 14 No's generators and its auxiliaries having a total capacity of 3478 MW, planned and unplanned switching operations of high voltage transmission lines & power transformers (500/220 kV).

He also worked as Electrical Maintenance Engineer at this plant, responsible for maintenance of 500/220 kV switchyard (Daily, Weekly, Monthly) which includes planning of shutdown, of



switchyard equipment's, arrangement of material and manpower and technical assistance, Planning for replacement of 220 kV circuit breakers, which includes tender advertisement, Technical and Financial evaluation of Bids and preparation of plan for modification of obsolete equipment.

Currently, he is spearheading the project development of Hydropower, Thermal (R-LNG based, Coal Based) Projects. Possess unique combination of financial, and technical skills essential for project development thus played an integral role in developing the bankable contractual template for private sector hydropower Power Purchase Agreements, RLNG based PPA's, concession documents. He is leading the team of Engineers who are expert in power sector for finalization of Power Purchase Agreements including technical section and schedules.

### PROFESSIONAL EXPERIENCE

#### **Central Power Purchasing Agency (Guarantee) Limited (CPPAG), Islamabad (2015-Present)**

##### ***Deputy General Manager Technical***

Currently, he is leading the project development of Hydropower, Thermal (R-LNG based, Coal Based) Projects. He possesses unique combination of financial, and technical skills essential for project development thus played an integral role in developing the bankable contractual template for private sector hydropower Power Purchase Agreements, RLNG based PPA's, concession documents. He is leading the team of Engineers who are expert in power sector for finalization of Power Purchase Agreements including technical section and schedules.

#### **National Transmission and Dispatch Company (NTDC), Lahore (2013-2015)**

##### ***Chief Engineer Technical (Hydel)***

He was leading a team of Engineers in WPPA for development of Power Plants in private sector as IPP's (Hydro/Coal/RLNG-Dual Fuel).

As team leader, he was responsible for Development/negotiation and finalization of Power Purchase Agreement (PPA) for Hydro & Thermal power Projects, which includes 147 MW Patrind , 102 MW Gulpur, 720 MW Karot, 840 MW Suki Kinari , 150 MW Grange Thermal (Coal Based), 3600 MW Bikki, Balloki, H.B. Shah RLNG Based. Responsible for interaction with private power projects sponsors/developers regarding finalization of technical and financial schedules of power purchase agreements (PPA),

He was in charge for the economic & financial analysis of hydro IPPs to find out financial viability of the project and conformance of the costing and other assumptions to government/regulator policies and was responsible for interaction with PPPIB/GOP for study and review technical and financial aspect of the feasibility studies of private sector power projects being implemented in Pakistan and its policy related issues.



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**PAKISTAN WAPDA Tarbela Hydro Power Station****(2012-2013)*****Senior Engineer Electrical Maintenance Switchyard***

He was responsible for maintenance of 500/220 kV switchyard (Daily, Weekly, Monthly) which included planning of shutdown, of switchyard equipment's, arrangement of material and manpower and technical assistance. He was planning for replacement of 220 kV circuit breakers, which includes tender advertisement, Technical and Financial evaluation of Bids.

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**National Power Control Center (NPCC), Islamabad****(2010-2012)*****Deputy Director (Load Management Cell)***

As an In-charge of Load Management Cell, he was responsible for monitoring Load Management Program, implemented by respective DISCO's, and ensured its implementation as desired by NPCC. He was responsible for the preparation of Energy Data, Calculation of energy available and required Load Management. He analyzed the Load Trend and Load Management on hourly/daily basis for domestic and Industrial consumer.

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**ROYAL COMMISSION YANBU AL SINAIYAH SAUDI ARABIA****(2000-2010)*****Load Dispatch Engineer***

He worked as Load Dispatch Engineer, responsible for Real time dispatch of company's generation assets, transmission operations, maintenance of power quality and reliability with special emphasis on EMS including Load Flow Study. He was involved in the contingency Analysis, and State Estimator through TELEGYR SCADA SYSTEMS. Also, he worked as the member of the task group for the adoption and fulfilling the requirement of QMS & EMS in Dispatch Department (LDC) as per the company policy for certification to International Standards (ISO 9001 & ISO 14001).

He prepared the procedures for works related to LDC, guidelines for switching operations, standard switching programs and reviewed/revised standing instructions associated to Load Dispatch Center as a documentation requirement of QMS for implementation of ISO 9001 in Power and Water Dispatch Department (LDC).

He took part in the testing / commissioning of MYAS ~ Saudi Electric Company (WR) 380kV system, which included 4 No. 250Mva, 380/115kV Inter Tie Transformers and 2 No, 380kV overhead Transmission Lines.

He managed the power interchange (Schedule/In-advertent) between MYAS and Western region (SEC JEDDAH) through 380 kV Tie lines.

He worked as the member of the task group for the development of Business plan (2005 ~2009) for Power and Water Dispatch Department in congruence to Company's objectives and responsible for the implementation & coordination of planned and unplanned outages of transmission network and substation facilities for maintenance of observing safety precautions.



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**National Power Control Center (NPCC), Islamabad****(1993-2000)*****Deputy Director (Power Control)***

As an in-charge of LDC, he was responsible for managing and monitoring power system real time operations, such as management of energy requirement of the country, dispatching, transmission operations, power scheduling, resource planning & system reliability functions.

To develop and implement the loading guides for power flow on 500,220,132, and 66 kV transmission lines and power transformers as per technical limits, thus ensuring reliability and stability of WAPDA integrated power system. He was responsible for the implementation and follow up of the WAPDA policies regarding PPAs with IPPs for Day-to-day operation. He implemented load-rolling procedures, under frequency load shedding procedures & VAR schedules for WAPDA transmission facilities and developed the contingency plans for the power system network for emergency.

He was involved in the evaluation of contingencies and analysis of load flow studies for conducting major shutdowns.

Also, he was responsible for the regular review of system bottlenecks, for submission to management for augmentation in the existing interconnection facilities.

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**Tarbela Hydro Power Station & Hydro Power Extension Project****(1985-1993)*****Assistant Director Contract***

He worked as Assistant Director Contracts for contract management in Tarbela Hydro Project, responsible for reviewing tender documents. He was also involved in the evaluation of bids Technically/Financially & processing for AWARD of contract. He monitored site activities including contractor progress and quality standards for Project implementation according to WAPDA Standards and reporting the progress. He was part of Inspection team for Installation / testing /commissioning of Generators, H.V. Unit Transformers, Circuit Breakers and other Switchyard equipment. Also, he worked as Supervisory/Shift Engineer in Tarbela Power Station for Operation & Maintenance of 14 No's generators and its auxiliaries having a total capacity of 3478 MW. He coordinated and conducted the planned and unplanned switching operations of high voltage transmission lines & power transformers (500/220 kV).

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**EDUCATION**

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M.Sc. Electrical Engineering (Power) University of Engineering and Technology, Taxila, 2000

MBA Allama Iqbal Open University, Islamabad, 1998

B.Sc. Electrical Engineering (Power) NWFP University of Engineering & Technology Peshawar, 1984

## TRAINING

17<sup>th</sup> Refresher Course, WAPDA Academy Faisalabad, 2012  
 Middle Management Course, WAPDA Staff College Islamabad, 2011  
 Developing and Building Effectiveness Supervisor by MARAFIQ Power & Water Utility Company, KSA, 2009  
 Basic Management Skills, Applied Training Centre at MARAFIQ Power & Water Utility Company, KSA, 2008  
 Basic Communication Skills, Applied Training at MARAFIQ Power & Water Utility Company, KSA, 2008  
 Power System Restoration after Blackout (methodologies & implementation strategies), Br. Mike Adibi of IRD Corp. USA, MARAFIQ Power & Water Utility Company, KSA, 2007  
 ISO 9000-14001 Certification, QMS & EMS Refresher Course, Det Norske Veritas, DNV's Leadership Style and Effectiveness, MARAFIQ Power & Water Utility Company, KSA, 2007  
 Voltage and Dynamic Security in Power System Operation by Applied Training Centre MARAFIQ & Water Utility Company, KSA, 2005  
 General Safety Awareness Course, MARAFIQ Power & Water Utility Company, KSA  
 Distribution Management System in the Restructured Environment, Applied Training MARAFIQ Power & Water Utility Company, KSA, 2004  
 Load Dispatcher Centre SCADA, Siemens Telegyr, Royal Commission, KSA, 2002  
 Oracle RDBMS, GTZ (Germany), NPCC Islamabad  
 Load Dispatcher Training For Advanced Application, SIEMENS/TELEGYR, KSA, 2002  
 Load Dispatch Training, Level-II, GTZ (Germany), Faisalabad, 1994  
 Basic Management Training, WAPDA Academy, Tarbela, 1988  
 Specialized Hydel Generation at Tarbela Training Institute, Tarbela, 1986  
 Basic Hydel Generation, Tarbela Training Institute, Tarbela, 1986

## REFERENCES

1. **Mr. SALMAN ATIAH AL-ZAHRANY**  
 Tel: 00-996- 4 –3966045  
 Manager, Power and Water Dispatch Department  
 MARAFIQ Power & Water Utility Company for Jubail & Yanbu, KSA
2. **Mr. KHALID. AL-NAFEY**  
 Tel: 00-996- 4 –3966001  
 Ex-Manager, Power and Water Dispatch Department  
 Present- Manager, Transmission & Distribution Department



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MARAFIQ Power & Water Utility Company for Jubail & Yanbu,KSA

**3. Mr. S.S.TANWEER HUSSAIN**

Tel: 00-92-42-5417232

Ex- General Manager, WAPDA



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**ZAFAR JAVED- DIRECTOR GENERAL (HR&A)****SUMMARY OF QUALIFICATIONS**

Mr.Zafar Javed is a dedicated HR professional with more than 26 years of experience in managing a full spectrum of human resources program, services and functions with Autonomous Organizations of Government of Pakistan (GoP) like Water & Power Development Authority (WAPDA), PEPCO and NTDCL. This is inclusive of 05 years in Central Power Purchasing Agency (CPPA). During these tenures he experienced dealings of human resources management, liaising, he developed good oral and written communication skills. He was part of all the HR related communication like payroll processes, staff recruitment and retention, implementation of HR policies and procedures, disciplinary procedures.

Currently, he is additional Director General (HR) of CPPA-G responsible for maintaining the data of all working personnel including officers and officials pertaining to their Personal Profiles, Official Information, Benazir Employees Stock Option Scheme (BESOS) Data, Service Record Data/profile, Training Record/Deputation cases local/foreign, Enquiry/Disciplinary and Medical cases of employees. Conducting inductions of new employees, planning and management of employees' salary compensation, and promotions.

**PROFESSIONAL EXPERIENCE****Central Power Purchasing Agency (Guarantee) Limited (CPPA-G), Islamabad (2015-Present)**  
**Director General (HR&A)**

He maintains and enhances human resources productively in the organization, develops strong manpower, identifies talent and deploys professional development programs in order to achieve organizational goals and fulfills employees' needs. Currently, he is performing the duties as Addl. Director General (HR&A) pertaining to HR & Admin matters of CPPA-G.

**Central Power Purchasing Agency (CPPA), NTDCL, Lahore (2011-2015)**  
**Manager (HR&A)**

He supervised the development, administration and implementation of all HR functions, such as: interviews, recruitment, appraisals, training and professional development, benefits, and associate relations activities.

**Pakistan Electric Power Company (PEPCO)/WAPDA, Lahore (1998-2011)**  
**Deputy Director (Career Management)**

He served as "Deputy Director (Career Management) in the office General Manager (HR) PEPCO from 2008 to 2011 and dealt with promotion and posting/transfer cases of BPS-19 and



BPS-20 officers. He dealt with the Pension, Gratuity, GLI and WAPDA Welfare Fund cases of the officers/officials working in Power Wing of WAPDA.

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**Water & Power Development Authority (WAPDA), Lahore (1996-1998)**

***General Manager (Admin.) WAPDA***

He served as Assistant Director (E-II-A) in the office of General Manager (Admin) WAPDA and dealt with HR matters of officials in BPS-01 to 16 of the set up.

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**Pakistan Electric Power Company (PEPCO), Lahore (1994-1996)**

***Assistant Director (Confidential)***

He worked as Assistant Director (Confidential) in the office of Chief Engineer (Admin) Power, PEPCO Lahore and dealt with promotion cases of the officers in BPS-17 to BPS-18.

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**Pakistan Electric Power Company (PEPCO), Lahore (1993-1994)**

***Assistant Director (Legal)***

He served as Assistant Director (Legal) in the office of Chief Engineer (Admin) Power. He dealt with the court cases of Power Wing WAPDA.

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**Water & Power Development Authority (WAPDA), Lahore (1990-1993)**

***Assistant Director (Admin)***

He served as the Assistant Director (Admin) in WAPDA Staff College and dealt with HR related matters of the employees.

## EDUCATION

M.A Political Science, University of Punjab, Lahore, 1988

M.A Administrative Science, University of Punjab, Lahore, 1986

Diploma (HRM), Pakistan Institute of Quality Control Lahore, 2006

## TRAINING

Middle Manager Course (MMC), WAPDA Staff College, Islamabad, 2010

Management System & Methods Course, Cabinet Secretariat Services Division, Govt. of Pakistan, 2000

Basic Management Course (BMC), WAPDA Academy, Tarbela, 1994

## REFERENCES

1. Mr. Saleem Shahzad





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Tell: 0322-8403821  
Company Secretary, PEPCO

**2. Mr. Muhammad Khurshid Alam**

Tell: 0342-4440244  
Director General (IT) CPPA-G

**3. Mr. Jamshaid Iqbal**

Tell: 0347-4440456  
Dy. General Manager (Finance) CPPA-G

**HAROON MASOOD – DEPUTY GENERAL MANAGER (FINANCE)****SUMMARY OF QUALIFICATIONS**

Mr. Haroon Masood has been serving various Finance and accounts departments of the power sector (WAPDA, NTDC & CPPA) for the last 26 years. He possesses a diversified experience, particularly in the fields of budgeting, local and foreign loan management, consolidation of accounts and balance sheet preparation, banking and contract management. He was associated with WPPo, the predecessor organization of CPPA (G) since 2006 as Director Finance and has dealt with Independent Power Producers (IPPs) like KAPCO, Rousch, and Chashma Nuclear projects. He has been actively engaged (representing CPPA) in the negotiation of Power Purchase Agreements relating to upcoming RLNG as well as coal projects.

Currently, he is working as Deputy General Manager Finance and dealing with all IPPs (nearly 40 IPPs) established under the Power Policies 2002 and onwards.

**PROFESSIONAL EXPERIENCE****Central Power Purchasing Agency (Guarantee) Limited (CPPAG), Islamabad (2015 - Present)**  
***Deputy General Manager (Finance)***

He is responsible for the management and implementation of Power Purchase Agreements with IPPs like KAPCO, Rousch, and Chashma Nuclear projects. He has been actively engaged (representing CPPA) in the negotiation of Power Purchase Agreements relating to upcoming RLNG as well as coal projects.

**WAPDA Power Privatization Organization (WPPo), Lahore (2006 - 2015)*****Director Finance***

During this period, he was involved with the management of PPAs of different Nuclear Power Plants (NPPs) like KAPCO, Rousch, and Chashma.

**Water and Power Development Authority (WAPDA), Lahore (2004-2006)*****Staff officer (Finance)***

He was responsible for the initial scrutiny of files and where necessary or directed by Member (Finance). He also prepared "Brief" to assist Member Finance in the decision making process.

**Water and Power Development Authority (WAPDA), Lahore (2003-2004)*****Deputy Director (Finance)***

He is responsible for Tender opening and Tender evaluation process as well as financial vetting of the contracts and Purchase Orders.

**Water and Power Development Authority (WAPDA), Lahore****1998-2003)*****Deputy Director (Cash and Banking)***

He was responsible for arrangement of long term finances through floatation of WAPDA Bonds and SUKUKs, arrangement of short term financing from local banks consortium, consolidation of the balance sheet of WAPDA and preparation of opening balance sheets of corporatized entities of WAPDA in close consultations with the consultants appointed for the purpose, repayment of foreign loans, monitoring the progress of foreign loans utilizations, maintenance of current account with corporatized entities and transfer of funds against approved bills for development projects

**Water and Power Development Authority (WAPDA), Lahore****(1990-1998)*****Assistant Director (Finance)***

H was responsible for the preparation of cash foreign exchange, foreign loans and common services budget in consultations with the projects concerned, submission of the same to Ministry of Finance through Ministry of Water and Power, getting it approved from GOP and monitored the utilization of the budget and reported to Ministry of Water and Power and Ministry of Finance.

**EDUCATION**

MA (Public Administration)	Punjab University, Lahore, 1987
Bachelors of Commerce	Punjab University Lahore, 1984
BA	Government College, Lahore, 1983

**TRAINING**

Senior Management Course, WAPDA Staff College, Islamabad, 2007  
Middle Management Course, WAPDA Staff College, Islamabad, 2006  
Junior Management Course, Accounts Training Institute, Lahore, 1995

**MUHAMMAD ASLAM – MANAGER FINANCE (B&R)****SUMMARY OF QUALIFICATIONS**

Mr. Muhammad Aslam has 12 years of exceptional experience in the power sector. He worked with Water and Power Development Authority (WAPDA) and Pakistan Electric Power Company (PEPCO). During his professional career, he worked on management of accounts, monthly cash flows, Variance Analysis Reports, information for Donor Agencies like International Monetary Fund (IMF) & World Bank etc. He maintained generating demands of Funds for payments. For years, he was responsible for financial reporting for management and ministries and he was also liable for the queries of legislatures (National Assembly & Senate) related to the power sector.

Currently, as Manager Finance of CPPAG, he is responsible for managing the Independent Power Producers (IPPs) under 1994 Power Policy regarding invoices and payments. He is also responsible for processing of Invoices, and Generating Demands of Funds for Payment. He monitors payments to IPPs and monthly Billing & Recoveries of DISCOs. He also deals with Issuance of Export Energy Invoices to IPPs.

**PROFESSIONAL EXPERIENCE**

**Central Power Purchasing Agency (Guarantee) Limited (CPPAG) (2016-Present)**

***Manager Finance***

He is managing IPPs under the 1994 Power Policy regarding invoices and payments. He is also responsible for processing of Invoices, and Generating Demands of Funds for Payment. He monitors payments to IPPs and monthly Billing & Recoveries of DISCOs. He also deals with the Issuance of Export Energy Invoices to IPPs.

**Water and Power Development Authority (WAPDA) (2015-2016)**

***Director (Corporate Planning)***

During this period, he was responsible for the preparation of Management Accounts, Monthly Cash Flow of Power Sector, and Variance Analysis Reports, information for donor agencies like IMF & World Bank etc. Also, he was answerable to the legislative questions raised by National Assembly and Senate related to the power sector.

**Water and Power Development Authority (WAPDA) (2002-2015)**

***Deputy Director (Corporate Planning)***

During this tenure, he analyzed the Power Sector receivables, monthly cash flow of Power Sector and prepared Management Accounts and addressed the legislative queries.

**EDUCATION**

ACMA Institute of Cost & Management Accountants of Pakistan, 2010

BA Punjab University, 1982

## NAMET ULLAH – MANAGER ERP

### SUMMARY OF QUALIFICATIONS

Mr. Namet Ullah has 15 years of IT experience. During these years, he worked on different ERP projects related to implementation of Oracle and others up-gradation projects. His professional experience in IT includes Project Management & Techno-Functional Experience with Oracle EBS Applications - Performing functional and technical work mainly within Oracle Financials, Procurement, Supply Chain Management, HRMS and Projects.

In Inbox Business Technologies (Pvt.) Ltd. he worked as Project Manager and implemented Oracle E-Business Suite (EBS) on different customer sites like Punjab Vocational Training Council and Haleeb Foods Limited and also upgrades the Oracle EBS at Lahore Electricity Supply Company Limited, Lahore (LESCO). He worked as Oracle Financials Specialist in LESCO, during his stay he worked on two major projects 'ERP implementation and Support' and 'Preparation of New Accounting Manual' under USAID Power Distribution Program (PDP) and successfully completed these two projects.

Currently, he is working as Enterprise Resource Planning (ERP) Manager, responsible for implementation of ERP system for billing and payment operations for GENCOs, IPPs and DISCOs, Up-gradation of CPPA-G website and also providing IT solutions for any IT related problems.

#### **Central Power Purchasing Agency (Guarantee) Ltd. (CPPA-G), Islamabad (2016-Present)**

##### ***Manager ERP***

He is responsible for implementation of ERP system for billing and payments processes to GENCOs, IPPs and DISCOs, Up-gradation of CPPA-G website and IT related problems for internal operating of CPPA-G.

#### **Inbox Business Technologies (Pvt.) Ltd.**

**(2015-2016)**

##### ***Project Manager***

During this tenure, he worked on different projects of implementation and up-gradation of Oracle (EBS) with different customers like Oracle EBS Up-gradation from 11i to R12.2.4 at LESCO, Oracle EBS R12 implementation at Punjab Vocational Training Council and Oracle EBS R12 Implementation at Haleeb Foods Limited, Lahore.

#### **Lahore Electric Supply Company Limited (LESCO)**

**(2009-2015)**

##### ***Oracle Financials Specialist***

He worked on the project of 'ERP Implementation and Support' which includes modules like General Ledger, Fixed Assets, Payables, Receivables, Cash Management, Project Costing,



Approval Management, iExpense, and configurations related to financials events in Supply Chain Management and Payroll modules.

He was the Project Coordinator/ Focal Person on the project of 'Preparation of New Accounting Manual' under USAID Power Distribution Program (PDP). New Accounting Manual was prepared to fully comply with International Accounting Standards as applicable in Pakistan, adjusted to meet NEPRA revised uniform accounting system requirements; and include policies, procedures, reporting requirements, job descriptions and other items relating to specific business processes under consideration.

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**Sui Northern Gas Pipelines Ltd. (SNGPL)****(2008-2009)*****Business Analyst***

He played the role of Functional Lead for the Oracle ERP Implementation and Support of Financials, Core HRMS and Payroll modules. His major duties were requirement gathering, process modeling, gap fit analysis, mapping of business requirements with the Oracle E-Business Suite modules, planning and designing of security matrixes, data conversion policies, UAT training and conduction.

He led the Oracle Financials Support Teams involved both functional and technical resources and planned and managed the activities of rollout of Oracle Financials modules in the regional offices of SNGPL, also part of project planning, scheduling, resource management, administration of project.

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**Azgard Nine Limited****(2006-2007)*****Oracle Application Developer***

He was responsible for the implementation of different Oracle modules with multi org features like General Ledger, Payables, Receivables, Fixed Assets, Purchasing and Inventory. Analysis and implementation of functional and technical solutions, development of customized reports, development of several customized forms, customization of Oracle Applications through Forms Personalization and Custom Library, customizations of Oracle Applications by extension of custom build Inventory Management System, data import through Oracle Open Interface Tables, Data Loader and ADI and document writing and user trainings.

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**Superior Solutions****(2003-2006)*****Project Manager***

Leading the team in different software application and web based projects and major responsibilities included project planning, monitoring and resource management, system study, forms designing and database designing, support to marketing department.

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**Simsoft Software Division****(2001-2003)*****Software Developer***



Major responsibilities were the development of forms and reports in Oracle Tools, System Study, Database Designing, Support and Maintenance and Document Writing.

### EDUCATION

Master of Business Administration Superior University, Lahore, 2007  
Master of Computer Sciences Michigan International College, Lahore, 2001  
Bachelor of Commerce (B.Com) University Of Punjab, Lahore, 1999

### TRAINING

PMP Training, Project Management Institute in Lahore, 2015  
Oracle R12 Training Courses, Oracle University, Lahore, 2008  
English Communication & Presentation Skills, Live Solutions (Call Center), Faisal Town, Lahore, 2007

### CERTIFICATIONS

Certified Software Quality Professional (CSQP), National University of Science and Technology (NUST) Islamabad, 2004  
Certified Marketing Professional (CMP), Superior University, Lahore, 2004

### REFERENCES

- 1. Muahmmad Atif**  
Email: [maatif545@hotmail.com](mailto:maatif545@hotmail.com)  
Tel: 0347-0010809  
Manager Finance (CP&C), Lahore Electricity Supply Company Ltd
- 2. Syed Azhar Iqbal**  
Email: [syedazhariqbal@yahoo.com](mailto:syedazhariqbal@yahoo.com)  
Tel: 0347-0010805  
Deputy Manager Finance, Lahore Electricity Supply Company Ltd

**SIBTAIN TAHIR – MANAGER (CORPORATE ACCOUNTS)****SUMMARY OF QUALIFICATIONS**

Mr. Sibtain Tahir has diversified professional experience in financial management. He is a qualified professional who uses methodological approach to achieve the required tasks.

Mr. Tahir has been involved in maintaining and managing corporate accounts for around 12 years. He is a CIMA qualified professional having an experience in ERP implementation, evaluation and monitoring of financial transactions, budget control, preparation of financial statements, keeping track of expenditures and administrative work. At CPPA-G, he manages accounts of distribution companies and makes sure that the generation companies receive their payments on time.

**PROFESSIONAL EXPERIENCE****Central Power Purchasing Agency (Guarantee) Limited (CPPAG) (2015-Present)**  
***Manager Corporate Accounts***

He supervises the preparation of financial statements of the organization and monitors and maintains the internal control. In addition to this, he manages the accounts of company, meets deadlines and oversees the financial transactions of the organization. He monitors and analyzes accounting data and produces financial reports/statements. He establishes and enforces proper accounting methods, policies and principles. He also maintains fiscal files and records to document transactions.

**Central Power Purchasing Agency(CPPA) (2011-2015)**  
***Deputy Manager Corporate Accounts***

He supervised and prepared the financial statements of the organization. He liaised with the internal and external auditors along with the auditors of the government. He presented and discussed the observations and suggestions in the Final Auditors Meeting (FAM). In addition to this, he prepared and kept track of the budget of the company by keeping internal control. He was also responsible for monitoring the expenditures in various heads in the organization. Moreover, he was also involved in the management of administration affairs. He supervised the staff of more than 50 employees in the accounts department and around 68 employees in HR.

**National Transmission and Dispatch Company (NTDC) (2004-2011)*****Assistant Manager Corporate Accounts-CPPA***

He was responsible for the bank relationship management, timely accounting and reconciliation of all transactions. He reviewed the payments made by PEPCO to IPPs (Independent power Producers). He also released the payments to electricity generation companies, distribution companies (DISCOs), oil and gas companies. He kept a complete record of finances and took the follow up activities of audit in compliance with the PEPCO rules, regulations, policies and strategies. In addition to this, he prepared and maintained daily pending liability reports, monthly disbursement report and monthly





projected payment reports. Also, he ensured that vouchers processed are matched and completed. transactions are correctly recorded and posted in Ledger posting summaries. It was one of his key responsibilities to ensure that there were sufficient funds available, at all times, for disbursements.

As the sectional in-charge of the Accounting Section, he managed inter office transactions among NTDC and CPPA and reduced the differences between formations through reconciliation. He also reconciled the accounts and consolidated trial balances of attached formations through checking and postings. Moreover, he finalized the accounts in ERP.

### EDUCATION

ACMA Institute of Cost & Management Accountants of Pakistan, 2006

CIMA

### TRAINING

Best Practices in Business Operations, USAID, 2015

Junior Management Course, WAPDA Staff College, Islamabad, 2011

Management Induction and Finance Course, WAPDA Staff College, Islamabad, 2005

Technical Training of Sales and Tax Audit, Collectorate of Sales Tax and Central Excise, 2001

**ENGR. OMER HAROON MALIK, PMP – MANAGER (S&MD)****SUMMARY OF QUALIFICATIONS**

Mr. Omer has over 14 years' experience in the areas of designing and delivering large complex projects, strategic business planning, policy and reform undertakings and operational management in Power Sector. He possesses significant experience as project leader, C-level strategic/operational manager and technical specialist and has operated in both conflict and post-conflict environments.

His overall project, strategic planning and operational management related experience includes his work on the USAID-funded Power Distribution Program that focused to improve performance and corporate operations of nine state-owned distribution companies. In addition to this, he has an experience of business planning, monitoring and evaluations, leading cross functional teams, distribution utilities overall reforms planning and execution, restructuring and change management, improving regulatory environment, energy and demand forecasting, transmission and distribution system planning, operational management, feasibility studies development, financial forecasting, financial analysis, procurement planning for donor's funded projects, donor's compliance and governing regulations, scheduling complex projects with interdependencies. He was part of Energy Distribution and Transmission Improvement Project (EDTIP), funded by World Bank that focused on improving and expanding the transmission system, introducing the Smart Meters, reducing demand through installation of CFLs and LT capacitors and improvement in institutional capacity through series of technical assistance interventions at Lahore Electric Supply Company (LESCO). He worked with Asian Development Bank funded Power Distribution Enhancement Project that focused on transmission and distribution system expansion and augmentation of LESCO, installation of wide scale electronic meters, and energy loss reduction interventions and the 6th secondary transmission and grids project and other projects funded by LESCO.

Currently, he is working as Manager Strategy and Market Development in CPPAG. He is responsible for preparing the business plan for CPPAG, the power market transition plan, overseeing the energy and demand forecasts functions, championing and facilitating the initiatives to bring in desired change.

**PROFESSIONAL EXPERIENCE****Central Power Purchasing Agency (Guarantee) Limited (CPPAG), Islamabad (2016-Present)**  
***Manager Strategy and Market Development***

As Manager Strategy and Market Development (part of the core senior management), he is responsible for preparing the business plan for CPPA, the power market transition plan,



overseeing the energy and demand forecasts functions, championing and facilitating the initiatives to bring in desired change.

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**USAID, Power Distribution Program (PDP), Islamabad (2011-2015)**

***Team Lead Business Planning /Director Program Management Office (PMO)***

Worked as Team Lead Business Planning /Director Program Management Office (PMO) in Power Distribution Program (PDP), funded by USAID. In 2012-13, in addition to his duties of Director PMO, he also served as Team Lead Commercial Operations for almost a year to turnaround the troubled team, in which he was successful. Further, because of his overall firm understanding of the electric utility business and the power sector, he was given a charge of Team Lead Business Planning in late 2014 to prepare the business plans for the two distribution companies. He also served as a key technical resource for the Policy and Regulations Team on policy improvement initiatives. As Director PMO, he led a team of experts in the areas of Monitoring and Evaluations, Environmental Compliance and Program Management

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**Lahore Electric Supply Company (LESCO), Lahore (2009-2011)**

***Executive Engineer / Deputy Manager (Planning, Monitoring and Control), Project Management Unit (PMU) & Secretary SBU to the BOD LESCO***

From design to delivery of developmental projects (infrastructure and technical assistance) being a part of PMU, Mr. Omer was instrumental in LESCO. Moreover, he prepared and got approved project feasibility and planning documents for obtaining financing from the International donor agencies (World Bank and ADB) for LESCO's various mega projects ranging from transmission system improvement to energy efficiency and technical assistance. He also managed the performance contract of the company with MWP, worked with tariff team to prepare petitions, performed technical studies, and contributed heavily in overall organizational and sector development.

Also carried out technical studies and forecasts during this tenure. Apart from this Mr. Omer was the **lead of Change Management Group** in LESCO mandated with bringing in corporate culture in LESCO. He had overall many successes in LESCO to his credit apart from his routine work.

He also served as the **Secretary of Strategic Business Unit (SBU)** to the Board of Directors for preparation of Business Plan for the Company during this tenure.

Based on his outstanding performance Mr. Omer was **promoted out-of-turn** from BPS-17 to BPS-18 after six years of service at LESCO, whereas minimum period at that time for first promotion was around 15 years.

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**Lahore Electric Supply Company (LESCO), Lahore (2004-2009)**

***Assistant Manager Planning and Projects Design***

During this duration, he worked on Load flow, short circuit and stability studies of LESCO's transmission network using **Power System Simulator (PSS-E)** tool. He was responsible for the



preparation of energy & demand forecasts which formed the basis of network planning and the strategic business plan and Planning Commission (PC)-1 document for different power sector projects for obtaining necessary approvals from the Relevant Ministries, Planning Commission and other formations of the Government. He involved in CFL distribution project design, under ADB's sustainable energy efficiency project.

**Lahore Electric Supply Company (LESCO), Lahore (2003-2004)**

***Assistant Manager Operations and Assistant Manager Metering and Testing***

As Assistant Manager Operations, he managed the operations of a subdivision (a unit of twenty thousand customers), that included commercial and technical system operations and distribution system maintenance. As Assistant Manager Metering and Testing worked in the field to check accuracy and replace faulty meters, installation of bulk load meters and conducted anti-theft campaigns.

**Multan Electric Power Company (MEPCO), Multan (2002-2003)**

***Assistant Manager Operations***

As Assistant Manager Operations, he managed the operations of a subdivision (a unit of fifteen thousand customers), that included commercial and technical system operations and distribution system maintenance.

## EDUCATION

**MBA** General Management, Lahore University of Management Sciences (LUMS) in 2017

**MBA** Major in Finance, Punjab University, Lahore Pakistan, 2007

**BSc Electrical Engineering** University of Engineering & Technology (UET), Lahore Pakistan, 2002

## TRAINING

Number of Trainings and exchange programs on Competitive Power Market locally and abroad (US and Turkey)

Visited US power market twice in 2010 and 2016 and met the counterparts to understand the power market functions

Strategic Planning and Change Management trainings by Lahore University of Management Sciences (LUMS)

Integrated Energy Modeling, series of workshops on model design, structure, reference scenario and sharing of models results conducted by Planning Commission of Pakistan & IRG

Improving Effectiveness of Boards by Lahore University of Management Sciences (LUMS)

Board Development Series (BDS) course leading to certification conducted by Pakistan Institute

of Corporate Governance (PICG), Karachi

Training on DISCOs tariffs petitions, Multi Year Tariff (MYT) and Cost of Service Study

Workshops on improving the regulatory environment of the Power Sector by PDP

Power Systems Analysis training course on Load Flow, Short Circuit and Stability Studies utilizing PSS/E tool by M/s PPI International for performing Integrated power planning

Energy and Demand Forecasting through Power Market Survey (PMS) and regression based Econometric methods

Transmission system protection training conducted by SIEMENS

Demand Side Management (DSM) related workshops arranged by World Bank

Energy Saving Companies (ESCOs) related workshop conducted by USAID

Junior and middle level extensive technical training courses at WAPDA Engineering Academy Faisalabad

Project Procurement (Services & Goods) training by Asian Development Bank (ADB)

Project Description Document preparatory sessions arranged by the World Bank & Asian Development Bank

Financial Analysis and project appraisal tools and techniques training conducted by PIM Lahore

Environmental & Social Assessment (ESA) report preparatory workshops arranged by World Bank

PMP preparatory course, arranged by PITB Punjab, conducted by ALDION USA

Primavera training conducted by PIM Lahore

Project Management Trainings by Lahore University of Management Sciences (LUMS)

Environmental Impacts Assessment (EIA) workshop for projects impacts

Multiple Workshops and training session on Clean Development Mechanism (CDM)

CDM workshop arranged by Ministry of Environment

Project's Project Idea Notes (PIN) preparatory workshop for integration with Clean Development Mechanism by WINROCK Consultants

Building Effective Teams conducted by PIM, Lahore

Introduction of Project Management conducted by PIM, Lahore

### CERTIFICATIONS

Certified Project Management Professional (PMP), Project Management Institute USA, 2011

Certified Board of Director, Risk Metrics Group USA, 2010



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Certified Primavera user, Primavera University, 2008

## REFERENCES

1. **Craig VanDevelde**  
Chief of Party (COP), Deloitte  
Email: [cvantravel@yahoo.com](mailto:cvantravel@yahoo.com)
2. **Arthur C Sedestrom**  
Chief of Party (COP), USAID Power Distribution Program (PDP), Pakistan  
Email: [asedestrom@gmail.com](mailto:asedestrom@gmail.com)
3. **Mr. Rashid Aziz**  
Task Team Leader /Senior Energy Specialist World Bank Mission, Islamabad  
Email: [rashidaziz1951@gmail.com](mailto:rashidaziz1951@gmail.com)  
Phone: 0300 8566 506



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**MUHAMMAD ASAD – MANAGER (TAXATION)****SUMMARY OF QUALIFICATIONS**

Mr. Muhammad Asad has 21 years of exceptional financial management experience. His expertise include financial management; leveraging technology & ERP systems to deliver stakeholders value; versatile contributor and a team-player with verifiable success of managing corporate and project finance functions of electric power utilities and petrochemical, packaging/paper & board industry, construction/operations; corporate governance, and public listing of securities. He is well-versed with SAP ERP systems.

In-depth experience and command over financial modeling, capital strategy, Initial Public Offerings (IPOs), floatation of debt instruments, budgeting, financial controls, statutory and regulatory reporting, auditing, board-room proceedings and company secretarial work, ERP, treasury, insurance and staffing/directing corporate finance function of large corporates in public and private sectors.

Currently, in CPPAG he is working as manager taxation, responsible for treasury and bank statements and daily financial transactions. He is responsible for the payments to the distribution companies (DISCOs) and Independent Power Producers (IPPs).

**PROFESSIONAL EXPERIENCE**

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**Central Power Purchasing Agency (Guarantee) Limited (CPPA-G) (2016-Present)**  
*Manager (Taxation)*

As manager taxation, he is responsible for treasury and bank statements and daily financial transactions. He is also responsible for the daily payments to the distribution companies (DISCOs) and Independent Power Producers (IPPs) accounts.

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**GHALIB INTERNATIONAL (PVT) LIMITED (2016-2015)**  
*Head of Corporate Strategy and Financial Advisor*

He was responsible for the preparation of strategic business plan and setting the supply chain and financial strategies. He also prepared of the organization for conversion to public listed company and IPO. He also implemented internal controls.

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**ROSHAN PACKAGES (PVT.) LIMITED (2014-2015)**  
*Advisor Projects*

During this period, he prepared Strategic Business Plan and feasibility report for new paper mill project. He assisted in negotiation of Joint Venture with Chinese Partners for setting up new paper mill in Pakistan. He responsible for financial management strategies and also oversaw the SAP B1 implementation as Project Director.



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**GUJRANWALA ELECTRIC POWER COMPMAY LIMITED, GUJRANWALA (2009-2014)*****Finance Director/CFO & Company Secretary***

During this tenure, his overall responsibility was corporate finance, company secretarial functions, maintaining and updating finance/tariff model of the company to ensure compliance to agreed covenants with the multi-national lenders and other regulatory bodies and shareholders. He was responsible for implementation of capital strategy based on annual budgets and long-terms cash flow plans, overall risk framework, financial management, budgetary controls and projects management. He managed periodic (quarterly and annual) tariffs determinations through National Regulator. He ensured timely finalization of annual audited financial statements and Directors/Shareholders approval. And also liaised with the GoP, national grid, and the central power purchasing agency on maintaining least-cost power acquisition plan.

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**DESCON OXYCHEM LIMITED, LAHORE****(2007-2009)*****Chief Financial Officer & Company Secretary***

During this period, he arranged financial close of 30000 tons green-field hydrogen peroxide facility and syndicated term financing ranging PKR 1.5 billion from local consortium of banks. He managed and steered company IPO and the listing process at Karachi Stock Exchange and developed long term business plan and risk management strategy. He also developed, recruited and staffed finance function of the company, established accounting policies, management reporting, budgeting and internal control systems. He implemented Oracle ERP and best business practices as required under the code of corporate governance.

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**PACKAGES LIMITED, LAHORE****(2005-2007)*****Project Financial and Expediting Manager***

He was responsible for long term financial modeling and maintaining of Management Decision Support System of the Company. His major tasks were Capital strategy, budgeting and investment decisions in local and international joint ventures. He also worked on SAP ERP implementation for business-unit reporting.

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**PACKAGES LIMITED, LAHORE****(2003-2005)*****Corporate Management Accountant***

During this period, he was responsible for listing and floatation of PKR 850 million SUKUK, budgetary controls of PKR 20 billion green-field paper and board mills expansion including coordination with local and international suppliers for on time commissioning of the project.

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**PACKAGES LIMITED, LAHORE****(1997-2003)*****Senior Accounts Officer***

He was the member of cross-functional and multinational productivity teams. During this tenure, he was responsible for Statutory accounting, reporting and auditing of the annual financial statements.



**PACKAGES LIMITED, LAHORE**

(1995-1997)

*Accounts Officer*

He ensured timely payment of loans, grants and bills. He presided over the monitoring and processing of payments and expenditure. He also prepared and monitored the organization's payroll system.

**EDUCATION**

FCMA	Institute of Cost & Management Accountants
EMBA	Lahore University of Management Sciences (LUMS)
BA	

**REFERENCES**

- 1. Mr. Muhammad Amjad Executive Director**  
ACWA Power, 22<sup>nd</sup> floor, Nassima Tower, Sheikh Zayed Road, PO Box 30582, Dubai, UAE  
Tel: +971 50 450 0817  
Email: [mamjad@acwapoer.com](mailto:mamjad@acwapoer.com)
- 2. Mr. Babar Iqbal, Chairman BOD, GEPCO**  
CEO, Elmed Instruments (Pvt) Limited, PO Box 1656, Roras Road, NOWL, Sialkot  
Tel: 0300 861 0197  
Email: [info@elmedinstruments.com](mailto:info@elmedinstruments.com)
- 3. Mr. Murad Ghalib Director**  
Ghalib International (Pvt) Limited, 13-E Izmir Town, Canal Bank Road, Lahore  
Tel: 0333 422 6156  
Email: [muradghalib@hotmail.com](mailto:muradghalib@hotmail.com)

**ABID RIZVI – MANAGER LEGAL****SUMMARY OF QUALIFICATIONS**

Mr. Abid Rizvi, currently, is serving as Manager Legal at CPPA-G. Having done bachelors in international law from LUMS and masters from University of Pennsylvania and experience at diverse organizations, he is a good resource for CPPA-G.

Currently, he is involved with litigation management of CPPA-G. He deals with all the legal issues within and outside the organization under the supervision of Chief Legal Officer. He reviews the contractual arrangements of the organization and prepares legal opinions of the cases. He also serves as an external liaison person for legal matters.

He had also served as legal consultant at LESCO where he prepared legal opinions and drafted legal pieces and provided with the input on legal policies. He has also served as a senior analyst at the Research Society of International Law where he prepared policy papers and provided legal ideas to many governmental organizations. As a research associate at London School of Economics, he was involved in the analysis of international trade law regimes and wrote policy papers to share the conclusions.

**PROFESSIONAL EXPERIENCE**

**Central Power Purchasing Agency (Guarantee) Limited, Islamabad (June, 2016-Present)**

***Manager (Legal)***

Provides team leadership and overall contract and litigation management of CPPA-G, along with legal input to key actors within the organization. Primary point of contact for daily legal issues and problem-solving initiatives for the organization. Reviews all contract agreements and preparing legal opinions. Liaises with external counsel and oversees their litigation and drafting work.

**Research Society of International Law, Islamabad, Pakistan (2013-2016)**

***Research Fellow, Senior Analyst***

Prepared policy papers for and provided legal input to several governmental and non-governmental organizations on international law issues affecting Pakistan. Completed major projects with key governmental and non-governmental organizations for improving Pakistan's compliance with international law and the Rule of Law. Advised key governmental institutions on critical issues of international law as they affect Pakistan. Conducted training for members of the legal community and the civil service, including judges and Foreign Service officers, on the impact of international law on Pakistan's legal system



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**London School of Economics and Political Science, London, England (2013-2014)**

***Research Associate, International Growth Center***

Provided legal input and analysis on the international trade law regimes of several South Asian countries, and how those legal systems impacted their trade relations with one another. Prepared a policy note on non-tariff barriers to trade affecting the trade between these South Asian countries.

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**International Legal Services, Islamabad, Pakistan (2012-2013)**

***Associate***

Prepared legal opinions and drafted agreements for several multinational and international governmental transactions. Provided legal input to the Board of Investment, Pakistan on international trade law. Prepared case materials and complaints for appellate commercial and constitutional litigation.

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**Brower Piven, PC, Stevenson, Maryland (2012-2012)**

***Staff Attorney***

Conducted legal research and discovery in preparation for class action securities fraud litigation. Assisted senior counsel in their litigation efforts.

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**Lahore Electric Supply Company, Lahore, Pakistan (2009-2010)**

***Legal Consultant***

Provided legal input and analysis to key actors within the organization. Prepared legal opinions and drafted agreements and legal policy pieces for use by the organization. Assisted external counsel in their litigation efforts. Assisted senior legal counsel in the organization's Quarterly Tariff Determination Petitions.

## EDUCATION

LL.M	International Law, University of Pennsylvania Law School, Philadelphia, USA, 2011
Post-Baccalaureate	Business and Law, Wharton School of Business, Philadelphia, USA, 2011
BA-LL.B	International Law, Lahore University of Management Sciences, Lahore, Pakistan

## TRAINING

Legislative Drafting Training Course, Sir William Dale Legislative Drafting Clinic, Institute of Advanced Legal Studies in association with the School of Law, Lahore, Pakistan, 2015



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## REFERENCES

**1. SAYYED MUBASHAR MASOOD**

Email: sayyedmubashar@gmail.com

Partner, Rasikh Consilium Advocates & Consultants; Senior Consultant & Associated Counsel Power Sector Legal & Regulatory Affairs, Cornelius, Lane & Mufti Advocates & Solicitors

**2. AHMER BILAL SOOFI**

Email: ahmersoofi@absco.pk

President, the Research Society of International Law; Advocate of the Supreme Court of Pakistan; Founding Partner, ABS & Co.

**3. SIKANDER AHMED SHAH**

Email: sikander.ahmed.shah@gmail.com

Professor at the School of Law and Policy at the Lahore University of Management Sciences



## NAZIF HASAN – MANAGER (TECHNICAL)

### SUMMARY OF QUALIFICATIONS

Mr. Nazif hasan has more than 29 years of versatile experience in the field of engineering development in WAPDA under the auspices of General Manager (Thermal) inclusive of 09 Years in WPPO/CPPA before the signing of Business Transfer Agreement (BTA) in between NTDC & CPPA-G subsequently followed by 1 Year with CPPA-G. He attained one year experience as Additional Manager Technical in CPPA-G, in addition to his present services rendered as Additional Manager (Tech) with Dy General Manager (Technical) WPPO/CPPA-G since 2007. During this tenure, he was the part of negotiating team against Independent Power Producers (IPPs) named Altern Energy, Habibullah Coastal Energy, Fauji Foundation Energy, Engro PowerGen Qadirpur Ltd. relating to Tariff and Power Purchase Agreements (PPAs) by CPPA-G to all IPPs under 1994 Power Policy.

Currently, he is managing the process of Energy Invoices of all Renewable plants of Wind and Solar of all IPPs under 2006 power policy, of all technical matters for Energy Imports and receivables from Energy Export to IPPs. In addition to that, he assists day-to-day development matters of Manager (Technical) directorate CPPA-G concerning Operating Committee, Power Acquisition Request Invoice processing, Liquidated Damages(LDs) calculation of all IPPs on the basis of their availability, Month wise Energy & Supplemental Information reporting to NPCC, PEPCO, CPCC and Ministry as desired from time to time. He is performing distinctive management activities in the area of Technical and financial administration, supervision of Technical staff, communication, and contracts etc. In this concern, he ensures to play a pivotal role as Additional Manager (Tech) which is required from Technical department staff towards fulfillment of all tasks assigned by higher ups which incidentally contributes towards success of a flourishing organization. In this capacity, he guarantees that project resources are matched against the needs of agency for international development and by implementing team relationships, and identify new ways to achieve efficiency and effectiveness towards accomplishment of all tasks assigned from time to time. He is also contributing towards the successful implementation of Enterprise Resource Planning in CPPA-G.

### PROFESSIONAL EXPERIENCE

**Central Power Purchasing Agency Guarantee Limited (CPPA-G), Islamabad (2011-Present)**

#### *Additional Manager (Technical)*

He is responsible to process the invoices related to maintaining databases of Energy Purchase Price (EPP), Capacity Purchase Price (CPP) & Supplemental Invoices of all IPPs under 2006 Power Policy, processing of LDs Invoices. He manages all scheduled and un-scheduled tasks with the correlation of his staff which is time bound and need careful vigilance and expertise to



perform precious, correct & concise calculation within specified time frame in the interest of Agency work. He handles and successfully managed the invoice processing of Combined Cycle Thermal based projects on Gas & HSD fuel and routine matters of the projects like Saif Sapphire, Orient, Halmore, Engro Powergen Qadirpur Ltd.

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**WAPDA Power Privatization Organization (WPPO) (CPPA), Lahore (2010-2011)**  
***Deputy Manager (Technical)***

He worked in WPPO and participated in the development of Thermal based Power Plants like Altern Energy, Habibullah Coastal Energy, Fauji Foundation Energy, Engro PowerGen Qadirpur Ltd relating to Planning Power Development, Load Flow Studies and Short Circuit Analysis. He was a part of system protection meetings, telecom meetings relating to PLC equipment and Witnessed Commissioning tests under various provisions of PPA under Power Policy 1994 of above mentioned IPPs. He reconciled data and source information correspondence from NPCC and then it was analyzed for processing of Invoices on monthly basis.

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**WAPDA Power Privatization Organization (WPPO), Lahore (2007-2010)**  
***Deputy Manager (Technical)***

He worked in WPPO and participated in the development of Thermal based Power Plants like Altern Energy, Habibullah Coastal Energy, Fauji Foundation Energy, Engro PowerGen Qadirpur Ltd relating to Planning Power Development, Load Flow Studies and Short Circuit Analysis. He participated in System Protection meetings, Telecom meetings relating to DPLC equipment and Witnessed Commissioning tests under various provisions of PPA under Power Policy 1994 of above mentioned IPPs. Tariff Determination issues at NEPRA board office Islamabad were part of his routine tasks. Also, he processed Monthly Energy Purchased Data for NEPRA Tariff determination, reconciled the Data and source information correspondence from NPCC, NTDC and analyzed for processing of Invoices on monthly basis.

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**WAPDA Thermal Power Plants GENCO-III (2006-2007)**  
***Deputy Manager (Tech)***

He worked for the development of Chichoki Malian Combined Cycle Power Plant including feasibility study of site, evaluation of tender documents and comparative statements of different components of tenders.

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**WAPDA Thermal Power Plants GENCO-III (2003-2006)**  
***Senior Engineer Instrumentation & Control***

He operated and maintained the Steam Turbine (2 x 65 MW), thermal Power Plant at SPS Faisalabad. During this period control, protection and various faulty instrumentation of Power House were rectified and set right for Generation.

**WAPDA Thermal Power Plants GENCO-III****(1987-2003)*****Junior Engineer Operation & Maintenance***

He worked in various Power Plants like NGPS Thermal Power Plant, Multan, SPS Faisalabad & GTPS Gas Turbine Power Plant Shahdara as Operation & Maintenance Engineer for Instrumentation and Control System of Power Plants.

**EDUCATION**

BSc. Engineering (Electronics) University of Engineering and Technology (UET), Lahore, 1986

**TRAINING**

Junior Management Course, WAPDA Staff College, Islamabad

Sector Specific Course, WEA, Faisalabad

Refresher Course of Senior Engineers, WEA, Faisalabad

**REFERENCES**

- 1) **Mr. Ihsan-ul-Majeed**  
Ex-General Manager (CPPA)  
Cell No. 0347 – 4440474  
Email: [ihsan.1952@yahoo.com](mailto:ihsan.1952@yahoo.com)
- 2) **Mr. Ghulam Murtaza Langah,**  
Chief Engineer (CPPA-G)  
Cell No. 0347 – 4441177  
Email: [ce2cppa@gmail.com](mailto:ce2cppa@gmail.com)
- 3) **Mr. Javed Naseeb Malik**  
Ex-General Manager (CPPA)  
Cell No. 0300-4213833  
Email: [javaidnaseeb@yahoo.com](mailto:javaidnaseeb@yahoo.com)

## JAVAID ASLAM – MANAGER TECHNICAL

### SUMMARY OF QUALIFICATIONS

Mr. Javaid Aslam has more than 30 years' experience in the power sector of Pakistan in the field of power planning, distribution planning, and electric power transactions with the Independent Power producers (IPPs).

He has prepared dozens of power generation and transmission projects as a projects planner. In 1995-96, as an Assistant Director environment planning, he updated the long term master power plan for Pakistan (1994-2018) with M/s ACRES International, Canada for which he was awarded an appreciation letter. In 2003, as a Deputy Director, he prepared a "Guidelines for Rehabilitation of Distribution Planning, WAPDA" for which he was again awarded an appreciation letter. In 2011, in NTDC, he prepared a long term generation plan for Pakistan (2011-2029) with M/s SNC-Lavalin. In 2013, with his command on dynamics and complexities of organizational development, he got 3rd Position at Middle Management Course (MMC), WAPDA Administrative Staff College Islamabad.

Currently, as a manager technical, he is looking after power transactions with IPPs, ensuring the health and reliability of the Power Transfer and Measuring Systems, negotiations and adherence to the Power Purchase Agreements (PPAs), raising liquidated damages and resolving disputes therein and in the power dispatches and in maintenance schedules, establishing annual dependable capacities of the power plants, and verification of the energy and capacity invoices for Generation Companies.

Some of his skills and capabilities are Strategic Decision Making and Policy Planning through System Dynamics involving Organization Development, Capacity Building, and Training. He has researched in organizational disorder, poor governance & performance, and motivation & organization transformation. He prepared a report "WAPDA: Dynamics of Organizational Disorder". NTDC, 2014 with the objective to develop A Management Training Module for effective management skills development course at WAPDA staff college, Islamabad. He trained many engineering students on internship in Power Planning, NTDC.

### PROFESSIONAL EXPERIENCE

#### Central Power Purchasing Agency-Guarantee Limited (CPPA-G), Islamabad (2016-Present)

##### *Manager Technical-IV*

He is currently dealing with power transactions with IPPs like Koohinoor Energy Limited, Raiwind, Rousch Power Limited Abdul Hakim near Khanewal, Saba Power Limited Sheikhpura, Southern Electric Power Company Limited (SEPCOL) and pre- commercial operation date (COD) cases of Orient Power Company and some others.





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**University of Management and Technology (UMT), Lahore** (2015-2016)

***Visiting Faculty***

He introduced, designed and taught a course "System Dynamics for Project Management" for the first time in Pakistan, to MS students for two semesters. He is among only a few scholars in Pakistan who learned and practiced system dynamics, useful for solving large and complex business, social, economic, organizational, management, technical, and political, etc. problems. He is a member of System Dynamics Society, MIT, USA.

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**WAPDA Power Privatization Organization (WPPO), NTDC, Lahore** (2013-2016)

***Manager Technical VI***

He was responsible for the power transactions, measuring systems, negotiations and adherence to the PPAs. He resolved disputes regarding liquidated damages and in the power dispatches and in maintenance schedules. He also established annual dependable capacities of the power plants, and verified the energy and capacity invoices for IPPs like Koohinoor Energy Limited, Raiwind, Rousch Power Limited Abdul Hakim near Khanewal, Saba Power Limited Shekhupura, Southern Electric Power Company Limited (SEPCOL) and pre COD cases of Orient Power Company. Also, he dealt matter of some other IPPs like Liberty Power, Mirpur Mathelo Sindh, Habibullah Coastal Power Limited Quetta, and Altern Energy Limited Fateh Jang.

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**Planning (Power) NTDC** (2012-2013)

***Additional Manager (Projects Planning -EHV)***

He looked after and prepared PC-Is for the transmission projects.

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**Planning (Power) NTDC** (2009-2012)

***Deputy Manager (Generation Planning)***

He prepared NTDC Development Plans for Transmission Expansion of NTDC network to meet with the growing Power Demand of DISCOs, to strengthen NTDC transmission network, and to evacuate power from IPPs/GENCOS' Power Plants to Load Centers. Prepared PC-II and PC-I for the EHV projects.

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**O/O G.M. Operation, WAPDA** (2003-2005)

***Deputy Director Head Quarter***

He created / bifurcated Circles, Divisions, Sub Divisions, Revenue offices in SS&T and Distribution in DISCOs. Responsible for quarterly 'Loading Data of Transformers' Report and Distribution Rehabilitation Guidelines.

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**Planning (Power), WAPDA** (1999 - 2002)

***Assistant Director, Projects Planning***

He prepared PC-II and PC-Is for EHV power Transmission projects.



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**Planning (Power), WAPDA** (1994 - 1998)

*Assistant Director, Environment*

He worked as counterpart with M/s ACRES International, Canada in the preparation of National Power Plan (1994-2018). Updated the National Power Plan and prepared six feasibility studies of Environment Volumes and selected sites for those power stations.

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**Planning (Power), WAPDA** (1987 - 1993)

*Assistant Director, Projects Planning*

He prepared PC-Is for Generation Projects.

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**Fikri and Associates Consultants Engineers (FACE) (PVT.) Ltd, Lahore** (1985-1987)

*Engineer*

During this tenure, he worked on SCARP Transition Project that was funded by World Bank and Rural Electrification Project funded by USAID.

## EDUCATION

M.Sc. Energy Planning and Policy, Asian Institute of Technology, Bangkok, Thailand, 1993

B.Sc. Electrical Engineering, University of Engineering and Technology, Lahore, 1985

## TRAINING

Middle Management Course, WAPDA Staff College, Islamabad, 2013

Technical Refresher Course, WAPDA Training Academy, Faisalabad, 2013

System Planning and Production Costing (SYPCO) Computer Model by SNC LAVALIN, Canada at Lahore, 2011

Markel Times Integrated Energy Model with Development of PAK-IEM Model for Pakistan by IRG Consultants of USA at Islamabad, 2010

Wien Automatic System Planning (WASP) Generation Expansion Planning Computer Model, Vienna by IAEA, 2009

Skills in Goal Setting and Work Planning, Pakistan Institute of Management, Lahore, 2007

Project Appraisal, PPMI (P&D), Islamabad, 2006-07

Quality in the Constructed Project, WAPDA Training Academy, Faisalabad, 2006

Effective Communication, Institute of Engineers Pakistan, Lahore, 2006

Sector Specific / Technical Refresher Course, WAPDA Training Academy, Faisalabad, 1999

Optimal Thermal and Operational Planning of Hydro-Thermal Electric Power Systems, with Computer Program VALORAGUA, World Bank Technical Assistance Program, NPPP, Lahore, 1995



Electricity Tariff Formulation. Lahmeyer International with World Bank Technical Assistance Program, NPPP, Lahore, 1994

Basic Management, WAPDA Training Academy, Tarbela, 1989

## REFERENCES

1. **Dr. Fiaz Ahmed Chohdary**  
MD NTDCL, Wapda House, Lahore  
Tel.: 042-99202229, 9210533, Cell: 0335-7402000
2. **Ashraf Ellahie**  
GM CCC, NTDCL, Wapda House, Lahore  
Tel: 042-99202282, Cell: 0335-7401363
3. **Shahzad Bashir**  
Chief Engineer / Principal, Wapda Engineering Academy Faisalabad  
Tel/Cell: 041-9230036/0300-6629578

**AIJAZ MOHSIN HASHMI – MANAGER (TECHNICAL)****SUMMARY OF QUALIFICATIONS**

Mr. Aijaz Mohsin has more than a decade of professional experience in the field of power sector. With diversified experience in multiple fields, He got confidence in technical as well as contractual, commercial and financial matters. He has attained competency in Computer Skills and proficiency in management, communication, analytical and interpersonal skills. He has more than 26 years' experience as Electrical Engineer in various formations, working with Pakistan WAPDA/PEPCO/NTDCL. His major contributions are in Power Control/System Operation, 500 kV & 220 kV Construction Projects, Operation & Maintenance of Thermal Power Station, Grid Station Operation & Maintenance. Major places of posting include Tarbela Dam Project, Regional Control Centre (South), Thermal Power Station Guddu, 500/220/132 kV Grid Station Dadu, EHV-II Construction Projects Hyderabad. He worked in Saudi Arabia(KSA) on deputation for two terms. First as System Operation Engineer with SCECO (South), Abha and second time as Project Manager 115/13.8 kV Substation Al-Khobar with Mohammad Al-Ojaimi Contracting Est. Dammam.

Currently, he is working as Manager (Technical) at CPPA-G under D.G.M-II and dealing with Bagasse based Co-generation Power projects and Small Hydropower projects. He is performing frequent liaising with AEDB and PPIB for the collection and authentication of LOI and LOS that is foremost part of EPA and PPA.

**PROFESSIONAL EXPERIENCE****Central Power Purchasing Agency Guarantee Limited****(2016-Present)*****Manager, Technical***

Leading the procurement matters of Bagasse based Co-generation Power projects of Sugar Mills and Small Hydropower projects. He is liaising with AEDB and PPIB for letter of Intent (LOI) and letter of support (LOS). Settle the issues, collection and authentication of these letters.

**Office of Project Director, EHV-II, NTDCL Hyderabad****(2014-2016)*****Additional Manager (Technical)***

He worked as support officer to Project Director, Oversee and supervise all matters during execution of different projects of 500 kV & 220 kV Substations and Transmission Lines in south region in provinces of Sindh and Balochistan. He interacted and dealt with Consultants like NESPAK and Barqab that were part of execution of projects. He was actively involved with all design, material, site issues, contractual issues and invoices of Contractors. He performed a key role to keep projects on track and took proper actions to facilitate meeting timelines of projects. During this tenure, he worked with more than 10 projects of Substations and Transmission lines.



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**Mohammad Al-Ojaimi Contracting Est. Dammam, KSA (2012-2014)*****Project Manager (On Deputation), 115/13.8 kV Substation Project Al-Khobar***

He was the Project Manager with Mohammad Al-Ojaimi Contracting Est. Dammam on Saudi Electricity Company (SEC)'s project of 115/13.8 kV GIS Substation at Al-Khobar. He executed design, procurement and construction phases of EPC project. His major responsibilities were civil works, electrical works, mechanical works (HVAC, Plumbing), Fire Protection System, Electrical Protection Systems and Substation Automation System.

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**Office of Chief Engineer, EHV-II, NTDCL Hyderabad (2009-2012)*****Deputy Manager/Additional Manager (Technical)***

He worked as staff officer in the office of Chief Engineer and was involved during execution of different projects of 500 kV & 220 kV Substations and Transmission Lines in south region in provinces of Sindh, Balochistan and up to Multan in Punjab. He collaborated with Consultants like NESPAK and Barqab during execution of projects. He was responsible for the preparation of Bidding Documents, Bidding Process etc to design, material, contractual issues and construction matters of projects were performed smoothly. He played a lead role to keep projects on track and took proper actions to facilitate meeting timelines of projects. During this period, he successfully completed 15 projects of Substations and Transmission lines.

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**500/220/132 kV Grid Station, GSO, NTDCL Hyderabad (2007-2009)*****Resident Engineer***

He was the in-Charge of 500 kV Grid Station, dealt with administrative, management and Operation & Maintenance matters. Being an active team leader, made every effort to create working environment and got desired results with respect to operation and maintenance activities during this period.

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**Regional Control Centre (South), NTDCL Jamshoro (2005-2007)*****Assistant Manager (Technical)***

He performed duties of technical coordination, operation & maintenance of EME equipment installed in the building and office management including colony matters.

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**Thermal Power Station Guddu (GENCO-II) (2000-2005)*****Junior Engineer***

He was the operation Engineer at 2x110 MW Steam Turbine Power Plant and Electrical Maintenance Engineer at 600 MW CCPP. And he performed operational procedures to smoothly run the Steam Turbine, Gas Turbine and Combine Cycle power plants.



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**Generation & System Operation Department, SCECO (South), Abha KSA (1998-1999)**  
**(On Deputation)**

***Electrical Engineer***

He worked in System Operation section of department and was responsible for the analysis of tripping/fault reports and technical support to site formations in operational matters was part of daily duty.

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**Regional Control Centre (South), WAPDA Jamshoro (1992-1998)**

***Junior Engineer***

He was the load dispatch Shift Engineer in Control Room and worked in sections of Shut Downs and Drawings during different periods.

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**Project Monitoring, Tarbela Dam Project, WAPDA Tarbela (1990-1992)**

***Junior Engineer***

He worked in Electronics Lab. of Instrumentation Division of Project Monitoring at Tarbela Dam Project (Water wing of WAPDA). During different periods performed duties in Lab. for repair and maintenance of monitoring equipment and as Site Engineer for inspections.

## EDUCATION

B.E (Electronics) Mehran UET Jamshoro, with 2<sup>nd</sup> Position, Gold Medal of 'The Best Graduate' and 'Certificate of Academic Merit', 1989

Intermediate (HSC) BISE Hyderabad, 1983

## TRAININGS

Middle Management Course, WAPDA Administrative Staff College Islamabad, May 2016

Pre-promotion Refresher Course, Senior Engineers at WAPDA Engineering Academy (WEA) Faisalabad (First Position), Nov 2015

Sector Specific Course, Junior Engineers at WEA Faisalabad, 2006

Junior Management Course, WAPDA Administrative Staff College Islamabad, 2006

Introduction to Web Page Design/Publishing, WEA Faisalabad, 2004

Sector Specific Course for Junior Engineers, WEA Faisalabad (First Position), 2004

Microprocessor & PLC Training, WEA Faisalabad, 2001

O&M of Thermal & Hydel Power Plants and Basics of Load Dispatch, WEA Faisalabad, 1993-1994



## REFERENCES

**1. Mr. Habib Anwar-ul-Haq**

Tel: 0333 408 8515

Ex-General Manager, GSC (South), NTDCL Hyderabad

**2. Mr. Tauseef Khawar**

Tel: 0300 340 4019

Additional Chief Engineer (Retd.), GENCO-II, TPS Guddu

**3. Mr. Fareed Ahmad Siddiqui**

Tel: 0335 740 1966

Project Director, EHV-II, NTDCL Hyderabad

**ZAFAR AHMAD SINDHU - MANAGER TECHNICAL****SUMMARY OF QUALIFICATIONS**

Mr. Zafar Ahmad has more than 30 years of experience in government power sector, with his roles and responsibilities spanning from maintenance, operation and management of steam turbine, gas turbine, solar power plants and wind turbine power plants. During these years of versatile experience in technical field, he was Manager Technical at WPPO, Project Engineer of CCPP Chichoki Mallian power plant, Deputy Operation Manager and then as Deputy Manager Maintenance at GENCO III for 15 years, Mechanical Maintenance Engineer and then as Commissioning Engineer at Thermal Power Station, Faisalabad. He also served as an instructor at Gas Turbine Training Centre, Faisalabad. During this time, he attended various management and technical courses at Harbin Electric Company China, ABB Mannheim, Germany and WAPDA Administrative Staff College, Islamabad.

He started working in CPPA as Manager Tech-IV where he was appointed for power procurement of Solar and Wind Power Projects under Renewable Power Policy 2006. During this period, he coordinated with Ministry of Water and Power, NEPRA, AEDB, PPDB and NTDCL for development of Solar and Wind Power Projects in Pakistan and negotiated with Independent Power Producers (IPPs) for entering in Energy Purchase Agreement (EPA). During this period, He executed four Energy Purchase Agreements of renewable power projects (Solar and Wind).

Currently, he is dealing with the settlement of invoices for various (Gas, RFO, bagasse and Hydel) Independent Power Producers (IPPs) where he is responsible for technical verification of energy and capacity invoices submitted by IPPs which includes coordination with NPCC.

**PROFESSIONAL EXPERIENCE**

**Central Power Purchase Agency (Guarantee) Limited (CPPA-G) (2016-Present)**

***Operations Manager***

He deals with the development of Wind and Solar Independent Power Producers (IPPs) under Renewable Power Policy 2006. His responsibilities include the coordinate with Ministry of Water and Power, NEPRA, AEDB, PPDB and NTDCL for Solar and Wind Power Projects in Pakistan, to negotiate with IPPs to enter into Energy Purchase Agreement with renewable power projects, to settle the invoices for various (Gas, RFO, bagasse and Hydel) Independent Power Producers (IPPs). In addition to this, he coordinates with NTDCL for the matters of invoices.

**CCPP Chichoki Mallian (2013-2015)**

***Project Engineer***





His responsibilities included monitoring and scheduling of the project activities with EPC Contractor (M/s Dongfang China), lending agencies and Ministry of Water & Power for the power plant under construction.

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**WAPDA Power Privatization Organization (WPPO) (KAPCO & AES Lal-Pir Cell) (2011-2013)**

***Manager Technical***

His responsibilities included the processing and verification of monthly invoices of “1600 MW Kot Addu Power Plant (KAPCO)” and “727 MW Lal-Pir Power Plant” as per PPA (Power Purchase Agreement). During this time, he managed invoices of Energy Purchase Price component, Capacity Purchase Price component, Open Cycle component etc. He also supervised the Analog to Digital Converter (ADC) testing of the plants as per PPA, calibration of Commercial Energy Meters installed at KAPCO and verification of Liquidated Damages (LD) invoices as per PPA clauses.

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**Thermal Power Station (WAPDA/PEPCO) Muzaffargarh**

**(2008-2011)**

***Deputy Manager Maintenance (Mechanical)***

His primary duties in this role included the preparation of feasibility reports for future actions, request for proposals (RFPs), and preparation of tender documents as per standards, bid evaluations and preparation of technical specifications.

Maintenance activities were carried out on various type of equipment for the two power plant under control.

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**Kot Addu Power Company (KAPCO), Kot Addu**

**(2002-2002)**

***Mechanical Maintenance Engineer***

During short time in this role, his responsibilities included inspection and routine maintenance of Hot Gas path of GE gas turbines and replacement of Axial airflow compressor of GT-5 due to unbalancing causing heavy vibration.

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**Thermal Power Station (WAPDA/PEPCO) Muzaffargarh**

**(1996-2008)**

***Deputy Operation Manager (ARE-Operation)***

His responsibilities included the supervision of the operation of 2 x 680 Tons/Hour Balanced draught Boilers having Dual Fuel system i.e. Furnace Oil & Natural Gas, Tangential Firing, 2 x 210 MW HP/IP/LP Steam Turbines, Single Shaft, Double Condenser, Reheat Steam, manufactured by Harbin Turbine Works China, Balance of plant including 6 Nos. Boiler Feed Water pumps, Condensate pumps, Air Compressors, Emergency Diesel Engines, ID/FD Fans, and GRC Fans etc., 2 x 247 KVA Hydrogen Cooled Generators with inner cooling water system for cooling of Stator windings, along with its Excitation System, 2 Nos. Step-up Power Transformers of 250 KVA each & 3 Nos. Auxiliary Transformers of 25 KVA each, 220 KV Switch Yard consisting of Double Bus Bar, 12 Bays for 6 outgoing Double Circuit Feeders & 6 incoming Double Circuit Feeders, Closed Cycle Cooling Water System consisting of 2 x 3 Circulating Water Pumps, 2 x 12 Cooling Tower Fans, Fuel Handling System consisting of 3



Nos. Main Storage tanks of capacity 75,000 M.T. & furnace oil decanting/transfer pumps, 9 Nos. Ground Water Tube wells having capacity of 3 Cusecs each for supply of water to Power Plant & Residential Colony, Natural Gas Skid to supply Gas Fuel at 100 MMCFD, Calculation of Plant data including Units Generation, Auxiliary Consumption, Fuels consumption, Heat Rate, Plant Efficiency, Plant Load Factor, Plant Utilization Factor, Plant Capacity Factor, Specific Fuel Consumption etc. on daily, monthly & yearly basis, performance of IDC & ADC tests

**Thermal Power Station (WAPDA/PEPCO), Faisalabad (1995-1996)**

***Commissioning Engineer***

He supervised the operation team and co-ordination with the Manufacturer's Team for safe and sound Commissioning operation of the Plant. His responsibilities also included supervision of 1st Annual Inspection of Steam Turbine & Heat Recovery Steam Generators.

**Thermal Power Station (WAPDA/PEPCO) Faisalabad (1989-1994)**

***Mechanical Maintenance Engineer***

He supervised the Routine/Emergency Maintenance of 8 Nos. Gas Turbines, Hot Gas Path Inspection of Eight Nos. Gas Turbines and Major Overhauling of Gas Turbines

**Gas Turbine Training Centre, Faisalabad (1986-1988)**

***Instructor***

He delivered Operation & Maintenance Training to the newly Inducted Staff & Graduate Engineers so that they can perform safe operation & qualitative maintenance of the Gas Turbines/Combined Cycle Power Plants.

**National Engineering Services, Pakistan (NESPAK) (1985-1986)**

***Consultancy Engineer***

During this tenure he was responsible for feasibility report, tender documents and evaluation reports of 210 MW Steam Power Plant, Guddu

## EDUCATION

BSc. Mechanical Engineering (Gold Medalist), University of Engineering & Technology, Lahore, 1985

## TRAINING

Contracts Management, WAPDA Administrative Staff College, Islamabad, 2010

Management Course, WAPDA Administrative Staff College, Islamabad, 2010

Operation & Maintenance Training of Combined Cycle Power Plant, Harbin Electric Company China, 1993



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Operation & Maintenance Training of Combined Cycle Power Plant, ABB, Mannheim, Germany,  
1990

#### **CERTIFICATIONS**

Project Management for Development Professionals – PMD Pro 1, Inside NGO, Washington, DC,  
2013

**TARIQ NASRULLAH MALIK – MANAGER (TECHNICAL)****SUMMARY OF QUALIFICATIONS**

Mr. Tariq Nasullah Mlik has more than 26 Years of versatile management experience in the field of Thermal Power Plant operation and Maintenance, Air Conditioning and Elevator System And Project Management in WAPDA under the auspices of WAPDA Thermal Generation, He also worked at National Transmission & Dispatch Company Limited (NTDC) before the signing of Business Transfer Agreement (BTA) subsequently followed by 1 Year with CPPA-G. He attained one-year experience as Manager Technical in CPPA-G. In addition to his, present services rendered against his post in CPPA as Additional Manager (Technical) with Chief Engineer/Deputy General Manager settlement CPPA. He is responsible to process Energy Purchase Price (EPP) and Capacity Purchase Price (CPP) Invoices of Gas/ Liquefied Natural Gas (LNG)/High Speed Diesel (HSD) based combined cycle, thermal power plants, Independent Power Producers (IPPs) installed under 2002 Power Policy, GENCOs, WAPDA Hydel and bagasse based SIPPs. He also worked in Chief Engineer/Dy. G.M. establishment CPPA from 2009 to October 2011. Interaction with NEPRA and attend hearings at NEPRA, MOWP, PPIB, NPCC, deal with Audit Parties is part of his experience.

Currently, he is responsible for EPP and CPP invoices of seven Gas/LNG/HSD based combined cycle thermal power plants (IPPs) installed under 2002 Power Policy, GENCOs, WAPDA Hydel, and bagasse based SIPPs, control day-to-day operations of Manager Technical-V office concerning Invoice processing, performing Annual Capacity Tests (ACTs), holding Operating Committee Meetings (prepare their minutes and finalize them in the form of Operating Procedure etc.) deals with day to day matters/issues of above mentioned IPPs.

**PROFESSIONAL EXPERIENCE****Central Power Purchasing Agency (Guarantee) Limited (CPPAG)****(2015-Present)*****Manager (Technical)***

He is responsible to control all operations concerning EPP and CPP invoices of seven of the Gas/LNG/HSD based combined cycle thermal power plants IPPs, installed under 2002 Power Policy, GENCOs, WAPDA Hydel, and bagasse based SIPPs. He also controls day-to-day operations of Manager Technical-V office concerning Invoice processing, performs Annual Capacity Tests (ACTs), holds Operating Committee Meetings (prepare their minutes and finalize them in the form of Operating Procedures etc), deals with day to day matters of the above mentioned IPPs.



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**Central Power Purchasing Agency (NTDC) (2011-2015)*****Additional Manager (Technical)***

He managed the processing of EPP and CPP Invoices of Gas/LNG/HSD based combined cycle thermal power plants (IPPs) installed under 2002 Power Policy, day-to-day operations concerning Invoice processing, performance of Annual Capacity Tests (ACTs), arrangement of the Operating Committee Meetings (preparation of minutes and their finalization, formation of Operating Procedure etc.), dealt with day to day matters of the above mentioned domain.

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**Central Power Purchasing Agency (NTDC) (2009-2011)*****Deputy Manager (Technical)***

He signed the establishment of Small Power Plants/Captive Power Plants (SPP/CPP) under Chief Engineer/Dy. G.M, issued of their Energy Transfer Rate (ETR), resolved day to day matters and issues of CPPs, interacted with UET through I.T. section for the development of I.P.A.S. and also performed the additional duty of Deputy Manager Transport.

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**WAPDA Nandipur Thermal Power Project (2009-2009)*****Senior Electrical Engineer***

He worked as Senior Electrical Engineer at Nandipur Power Project where he resolved the electrical issues faced by the plant.

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**WAPDA HOSPITAL COMPLEX LAHORE (2004-2008)*****Sub divisional Officer (Air Conditioning and Lifts)***

He was the in-charge of Air Conditioning System and Lifts at WAPDA Hospital Complex Lahore. He managed the smooth operation. He looked after the maintenance and overhauling of Air Conditioning and Lifts systems with a fleet of staff comprising of mechanics, electricians, operators, fitters and helpers.

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**Thermal Power Station Muzaffargarh (Genco-III) (2000-2004)*****Junior Shift Engineer (630MW Phase-I)***

He was responsible for the smooth continuous operation of (3 units 210MW each), safe startup and shutdown of units and coordination with N.P.C.C. Islamabad.

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**Gas Turbine Power Station Shahdara Lahore (Genco-III) (09/1991-2000)*****Shift Engineer/Junior Maintenance Engineer Electrical Section***

He managed a fleet of staff for smooth continuous operation of six units, safe startup and shutdown of plants, Electrical System Maintenance and Maintenance Planning and Coordination with N.P.C.C. Islamabad. He measured the HSD Fuel quantity/quality in trains/tankers and decanting of HSD in tanks.

**N.G.P.S Multan (WAPDA)****(1990-1991)*****Junior Shift Engineer***

He managed a fleet of staff for smooth continuous operation of 4 units (65 MW each), safe startup and shutdown of plant.

**Thermal Power Station Guddu (WAPDA)****(1990-1990)*****Junior Shift Engineer***

He managed a fleet of staff for smooth continuous operation, safe startup and shutdown of plants capacity 2\*110MW.

**EDUCATION**

BSc. (Electrical Engineering) University of Engineering and Technology (UET) Lahore, 1989

**TRAINING**

Six Months Gas/Steam Turbine Operation and Maintenance Training, Training Centre GTPS, Faisalabad, 1991

One Month Gas/Steam Turbine Operation Simulator Training, Training Academy, Faisalabad 1991

Two Months Sector Specific Training, Training Academy, Faisalabad, 2003

Twelve Weeks Management Training, Management Training Academy, Islamabad, in 2004

**REFERENCES****1. Mr. Ehsan- ul- Majeed Khan**

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Retired General Manager Thermal Generation

**2. Mr. Javid Naseeb Malik**

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Tel: 03004213833

Retired General Manager CPPA



3. **Mr. Ghulam Murtaza**

Email: [ce2cppa@gmail.com](mailto:ce2cppa@gmail.com)

Tel: 03474441177

Deputy General Manager CPPA-G

**SAQIB SHAMIM- MANAGER (TECHNICAL)****SUMMARY OF QUALIFICATIONS**

Mr. Saqib has more than 24 years of versatile experience in the field of Thermal Power Plant Operation in Water and Power Development Authority (WAPDA) and Contract Management in WAPDA Power Privatization Organization (WPPO) for 11 years and in Central Power Purchasing Agency (CPPA) for 6 years including one year after the signing of Business Transfer Agreement (BTA) between NTDCL and CPPA-G. Moreover, he has also performed the additional duties of Manager Technical-II CPPA for a period of three months. During his professional career, he also worked with 1292 MW Hub Power Plant. Liaison with local and imported coal based IPPs for feasibility studies, tariff negotiations, Power Purchase Agreements, Standard Operating Procedures, witnessing of RRT of RFO based Power Plants operating under GoP Power Policy 2002.

Currently, he is managing the processing of Energy and Capacity Invoices of four GENCOs, WAPDA Hydel, two Hydel IPPs and four Baggase Based Power Plants in the directorate of Manager (Technical-V) CPPA-GL. The job involves interaction with NEPRA, Ministry of Water & Power, PPIB, NPCC and Commercial and Government Auditors as required.

**PROFESSIONAL EXPERIENCE**

**Central Power Purchasing Agency (Guarantee) Limited, Islamabad (2012-Present)**

***Manager (Technical)***

He is responsible to process invoices of EPP, CPP & supplemental invoices of four GENCOs, WAPDA Hydel, two Hydel IPPs and four Baggase Based Power Plants. In addition, he has also witnessed Reliability Run Test (RRT) of Wind based Power Plants.

**Central Power Purchasing Agency. (2011-2012)**

***Deputy Manager (Technical)***

He was responsible to process Supplemental Invoices of four GENCOs, WAPDA Hydel, two Hydel IPPs and four Baggase Based Power Plants.





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**WAPDA Power Privatization Organization****(2007-2010)****Deputy Manager (Technical)**

He was involved in processing of invoices relating to 1292 MW Hub Power Plant. He liaised with local and imported coal based IPPs for feasibility studies, tariff negotiations, Power Purchase Agreements, Operating Procedures, witnessing of RRT of RFO based Power Plants operating under GoP Power Policy 2002.

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**WAPDA Power Privatization Organization****(1999-2007)****Assistant Manager (HUBCO Cell)**

He processed the invoices of Energy Purchase Price (EPP), Capacity Purchase Price (CPP) and Supplemental Charges Invoices for Hub Power Plant. He dealt with various technical, contractual matters related to Power Purchase Agreement and day to day Operational Issues. He monitored the Yearly Scheduled and Maintenance Outage programs for Hub Power Plant. He was involved in the negotiations of Power Purchase Agreements (PPAs) between NTDC & 840 MW Jamshoro Power Company Limited (JPCL).

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**Gas Turbine Power Station (CCP), Faisalabad / Shahdara****(1993-1999)****Shift Engineer**

He monitored the Power Plant operation within prescribed load limits and liaised with National Power Control Center (NPCC) Islamabad regarding plant dispatch and Outages. He was also involved in diagnosing the fault and coordination with Electrical and Mechanical Maintenance Sections.

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**EDUCATION**

B.Sc. Mechanical Engineering (1st Division with Honors) University of Engineering & Technology, Lahore, Pakistan, 1991

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**TRAINING**

Basic Management Course WAPDA Academy, Tarbela, 1992

Integrated Induction Course, WAPDA Academy, Faisalabad, 1993

Sector Specific Generation Training, 1994

JICA Thermal Power Engineering Course, Japan, 2006

Sector Specific NTDC Pre-Promotion Course, 2007



## REFERENCES

**1. Ehsan ul Majeed**

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Ex General Manager (Thermal), PEPCO

**2. Javaid Naseeb Malik**

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Ex General Manager (CPPA) NTDCL

**3. Ghulam Murtaza Langah**

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Dy. General Manager CPPA-GL

## ASHAR ALI - MANAGER (TECHNICAL)

### SUMMARY OF QUALIFICATIONS

Mr. Ashar Ali Manager technical of Central Power Purchasing Agency- Guarantee Limited (CPPA-G) has more than 25 Years of multidimensional experience in the power sector from grassroots to managerial position. He played an important role in 1994 Contract Management of Private Independent Power Producers (IPPs). WAPDA state owned utility had created a cell name WAPDA Power Privatization Organization (WPPO) to deal with these IPPs, with the help of American consulting company International Resource Group (IRG) and he was part of this major transition of Pakistan power sector. He experienced correspondence with regulatory authority regarding Tariff Petitions, Generation Licenses and Feasibility Reports filed by sponsors. During the start of his career in power sector he experienced installation, testing and commissioning of IPPs and hand on experience of maintenance and operation of power plants. During his tenure at WPPO he involved to administer Power Purchase Agreements (PPAs) especially technical schedules for combined cycle, D.G. Lead a team of Power plant operators working in daily shift for smooth and safe operation of the Combined Cycle Power Plants, operation of the 220 kV Switchyard of One and Half Breaker Scheme, SF6 Breakers, 125 MVA Power Transformers, Direct current (DC) supply system and operations of HVAC system and conventional Thermal Power Plants.

Currently, Being an active member of technical department of CPPA-G he negotiates PPAs under Power Policy 2002, 2015 (especially Coal projects and RLNG) power projects with the change of Government of Pakistan (GOP) Policies regarding performance criteria for operating parameters with reference to the ISO, IEC, ASME codes and manufacture's standards.



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**PROFESSIONAL EXPERIENCE**

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**WAPDA Private Power Organization****(2012-Present)*****Additional Charge of Manager (Technical)***

Being an In-charge, the responsibilities include supervision and provision of guidance to other engineers of office regarding in processing of monthly purchase invoices, execution of job assignments pertaining to the operational matters of the established projects like performance testing as well as finalizing the technical & commercial aspects of Power Purchase Agreements (PPAs) for the power projects being or to be developed in the country by the private sector. The other assignments include development of operational procedures, performance criteria, coordination with other departments for selection of project site, execution of interconnection studies, selection of protective relaying equipment, installation of metering system and its calibration as well as testing of measuring transformers & supervision/coordination of plants commissioning process.

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**WAPDA Private Power Organization****(2008-2012)*****Deputy Manager (Technical)***

Inspection of invoices submitted by Independent Power Purchasers (IPPs), technical & commercially, monitoring the performance of IPPs under the Power Purchase Agreement, Fuel Supply Agreement, imposition of liquidated damages (LDs) of nonperformance on the IPPs / processing of Dispute cases and determination of the Dependable Capacity based on Dependable Capacity Tests of the IPPs operating under Power Policy 1994.

Had an experience to negotiate / develop Power Purchase Agreement (PPA) with monitoring under guide lines of Power Policy 2002 of Government of Pakistan and attended the meetings in Private Power Infrastructure Board (PPIB), Islamabad as well as in the Ministry of Water & Power, Islamabad on behalf of WPPO in this regard.

Area of work also includes to prepare the test procedures of upcoming IPPs and witness the commissioning tests such as stator earth fault negative phase sequence ,bus-bar protection , automatic voltage regulator ,turbine governor over speed test, reactive capability, minimum load capability, load rejection initial Tested Capacity test and reliability run test.

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**WAPDA Private Power Organization****(1999-2008)*****Assistant Manager (Technical)***

Entrusted to deal with Independent Power Producers (IPPs) like Habibullah Coastal Power Project (Combined Cycle Plant), Liberty Power Project (Combined Cycle Plant) and Altern Energy Project (Gas Engines) regarding all technical issues and billing matters in the light of Power Purchase Agreement, Implementation Agreement and Fuel Supply Agreement.



Worked in plant performance evaluation, Dependable Capacity Tests and Reliability Run Tests (RRT) of Kohinoor Energy Power Project, Fauji Kabirwala Power Project, Saba Power Project and Habibullah Coastal Power Project. Computed Current Transformer & Potential Transformer Combine Errors of Habibullah Coastal Power Complex and Liberty Power Complex.

Prepared/developed feasibility report and request for proposal (RPF) for bidder for proposed 450 MW Combined Cycle Power Plant Faisalabad.

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**6x14 MW Gas Turbine Power Station, Shahdara, Lahore**

**(1996-1999)**

***Electrical Engineer (Maintenance)***

Routine and emergency checking / maintenance, rectification of day-to-day faults /problems and preventive maintenance of 14.75 MW air cooled Generators, 135 MVA Power Transformer OF/AF, 200kVA, Auxiliary Transformers oil filled, 123kV Switchyard single bus scheme, SF<sub>6</sub> Breakers, and LT circuit breakers heavy duty motors and HVAC system of the plant.

Long term and short term planning of the plant maintenance as well as management of concerned stores.

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**6x14 MW Gas Turbine Power Station, Lahore**

**(1993-1996)**

***Shift Engineer***

Lead a team of Power plant Operators working in daily shift. Also responsible to monitor and ensure smooth operation of the Gas Turbines(GT), 135 MVA Power Transformer, 200kVA Auxiliary Transformers, 123kV Switchyard single bus scheme, SF<sub>6</sub> Breakers, HVAC system of the plant and DC supply system.

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**600 MW Combine Cycle Power Plant, TPS Guddu**

**(1992-1993)**

***Assistant Shift Engineer***

To assist Senior Shift Engineer and also responsible to monitor and ensure smooth operation of 100 MW Gas Turbines of GE (frame 9) and 100 MW Steam Turbines of GE, operation of the 220 kV Switchyard of One and Half Breaker Scheme, SF<sub>6</sub> Breakers, 125 MVA Power Transformers, DC supply system and operation of the HVAC system.

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**WAPDA (Induction Training)**

**(1992-1993)**

***Junior Engineer***

Under gone one year Induction Training in the fields of Basic Management and Technical Training at Wapda Training Academy Tarbella and Wapda Engineering Academy Faisalabad respectively.

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**EDUCATION**

B.Sc. Electrical Engineering. University of Engineering and Technology (UET), Lahore



M.Sc. Diploma in Electrical Engineering, University of Engineering and Technology (UET), Lahore

MSc . Computer Science, AL-Khair University, AJK

### TRAINING

Sector Specific Training (T&G), Wapda Engineering Academy, Faisalabad

Training in Generation, Transmission & Distribution of Electrical Energy

Basic Management Course,

Sector Specific Training in Generation of Electrical Energy, PPRA, Islamabad, 2016

### CERTIFICATION/PROFESSIONAL MEMBERSHIP

Pakistan Engineering Council

The Institute of Electrical Engineers (IEE), UK

### REFERENCES

**1. Mr. Umair Zuberi**

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Manager Cisco Systems

**2. Mr. Muhammad Irfan**

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Business Manager, Hilton Pharma

**MUBASHER AHMED QURESHI-MANAGER (TECHNICAL)****SUMMARY OF QUALIFICATIONS**

Mr. Mubasher Ahmed is a Professional Engineer in Electrical discipline having divers experience of around 27 years. He served WAPDA, National Power Generation Company (NPGS or GENCO-III) and National Transmission & Dispatch Company Limited (NTDCL).

He worked for 11 years in WAPDA Power Privatization Organization (WPPO) which was established after introduction of private power sector in Pakistan under Power Policy 1994. Intermittently he was assigned the additional duties of Manager (Tech-IV) WPPO during the period 2012 to 2014. He worked with Thermal Generation of WAPDA of around 15 years.

He worked on contract management of IPPs under Power Policy 1994 running in combined cycle, DG Sets, Steam Power and Nuclear Power plants. He also administered a contract for import of power from Iran. He played the supervisory and coordinator role in IPPs' establishment under power policy 2002, Nuclear Power Projects (NPPs), and Coal Power Projects under 2015 Power policy. He has technical experience of commissioning tests, operation and maintenance activities and safe operations of power plant, switchyard and instrumentation & control systems of different IPPs. He was also a member of NTDCL commercial team for development and negotiation of 1<sup>st</sup> ever HVDC Transmission Line Project Transmission Service Agreement to be signed with Private Sector under Transmission Power Policy 2015.

Currently, he is manager technical of CPPA-G. Presently, he is dealing with purchase invoices, supplemental invoices and liquidated damage invoices pursuant to the PPAs. Coordinate with IPPs, regulator and other monitoring agencies like PPIB and Ministry of Water & Power with related matters. He is a part of technical team for development and negotiation of PPAs for upcoming coal projects. He administers these PPAs especially technical schedules.

**PROFESSIONAL EXPERIENCE**

**Central Power Purchasing Agency Guarantee Limited (CPPA-G), Islamabad (2015-Present)**

***Manager (Technical-I) WPPO***

He deals with all technical issues of Nuclear Plants CHASHNUPP-1, CHASHNUPP-2, Davis Energen Limited and Import of Power from Iran; supervising the development of Nuclear Power Plants CHASHNUPP-3, CHASHNUPP-4, K-3 and K-4. Part of technical team for development and negotiation of PPAs for upcoming coal projects. He is a member of NTDCL commercial team for development and negotiation of 1<sup>st</sup> ever HVDC Transmission Line Project Transmission Service Agreement to be signed with Private Sector under Transmission Power Policy 2015. Participated in performance / ADC testing of UCH, KAPCO, KEL, AES LalPir and DEL.




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**WAPDA Private Power Organization (WPPO), NTDCL (2014-2015)**
***Manager (Technical-I) WPPO***

He managed all the technical issues of NPPs CHASHNUPP-1, CHASHNUPP-2, Davis Energen Limited and Import of Power from Iran; during this tenure handle the development of Nuclear Power Plants CHASHNUPP-3, CHASHNUPP-4, K-3 and K-4. Part of technical team for development and negotiation of PPAs for upcoming coal projects. He was a member of NTDCL commercial team for development and negotiation of 1<sup>st</sup> ever HVDC Transmission Line Project Transmission Service Agreement to be signed with Private Sector under Transmission Power Policy 2015. He participated in performance / ADC testing of UCH, KAPCO, KEL, AES LalPir and DEL.

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**WAPDA Private Power Organization (WPPO), NTDCL (2011-2014)**
***Additional Manager (Technical-IV)***

During this period, he controlled all the technical issues of IPPs like ROUSCH, KEL, SABA, LalPir, Pakgen, SEPCOL and look after the post development phase of Orient, Saif, Sapphire and Halmore Power Plants, and also participated in performance / ADC testing of KAPCO, HUBCO, ROUSCH, KEL, AES LalPir, Pakgen, CHASHNUPP-I, Davis and Altern Power Projects.

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**WAPDA Private Power Organization (WPPO), NTDCL (2006-2011)**
***Deputy Manager (Technical-IV)***

During this tenure, he controlled all the technical issues of IPPs like ROUSCH, KEL, SABA, SEPCOL and look after the post development phase of Orient, Saif, Sapphire and Halmore Power Plants, and also participated in performance / ADC testing of KAPCO, HUBCO, ROUSCH, KEL, AES LalPir, Pakgen, CHASHNUPP-I, Davis and Altern Power Projects.

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**WAPDA Private Power Organization (WPPO), NTDCL (2005-2006)**
***Assistant Manager (Technical-IX)***

He dealt with all technical issues of Independent Power Producers (IPPs) Fauji Kabirwala, UCH and JPGL, and also participated in ADC testing of FKPCL and JPGL Power Projects.

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**National Power Generation Company (NPGCL) (2000-2004)**
***Junior Engineer***

He assisted with the coordinator of Gas Turbine Power Station, Shahdara.





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**WAPDA Gas Turbine Power Station, Shahdara** (1990-1999)

*Junior Engineer/Assistant Maintenance Engineer*

He worked under resident engineer Gas Turbine Power Station, Shahdara in operation and maintenance sections.

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**Imperial Construction Company (ICC)** (1989-1990)

*Assistant Divisional Engineer*

He worked on 500 kV Transmission Line and Grid Station construction projects.

## EDUCATION

B.Sc. (Electrical Engineering) University of Engineering and Technology, 1989

## TRAINING

97th Middle Management Course, WAPDA Administration and Staff College, Islamabad, 2016

34th Technical Refresher Course, WAPDA Engineering Academy, Faisalabad, 2016

Public Utility Regulation Course (PURC), University Of Florida, USA, 2008

Sector Specific Course (T&G), WAPDA Engineering Academy, Faisalabad, 2006

60th Junior Management Course, WAPDA Administration and Staff College, Islamabad, 2006

Sector Specific Course (Thermal), WAPDA Engineering Academy, Faisalabad, 2004

Sector Specific Training (Thermal), GTPS Training Center, Faisalabad, 1990

## REFERENCES

**1. Mr. Tariq Mehmood**

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Branch Manager, Bank Alfalah Phase-6, DHA

## MUNAWAR HUSSAIN – MANAGER TECHNICAL

### SUMMARY OF QUALIFICATIONS

Mr. Munawar Hussain has been working in the power sector in Pakistan since 1991. He has served at various technical positions in different organizations and has a diverse experience in the field. Currently, he is serving as Manager Technical at CPPA-G and is involved in negotiating and finalizing PPAs. Previously, he has worked as Additional Director WPPO and as Deputy Director WPPO. He has presented a couple of times in front of NEPRA during tariff determination hearings of IPPs. Before assuming the role of management, he worked as Junior Engineer and Trainee Engineer at different power plants.

Throughout his academic and professional career, Mr. Munawar has shown an excellent performance. He continuously worked to improve his qualifications as per the requirements of his job. He has a business administration degree along with the master's degree in electrical engineering that makes him quite a fit for the position he is working at.

### PROFESSIONAL EXPERIENCE

**Central Power Purchasing Agency (Guarantee) Limited, Islamabad (2015-2016)**

#### *Manager Technical*

Reviews and finalizes the technical aspect of the Power Purchase Agreements (PPAs) with IPPs and makes sure they comply with the Power Policies that they have been installed under. He negotiated the RLNG projects and the projects under the Power Policy of 2015 and concluded the PPAs. He also looks after the PPAs of the upcoming projects.

**NTDC/WAPDA (WPPO) (2011-2015)**

#### *Additional Director Technical*

He negotiated and finalized around 20 Power Purchase Agreements with the sponsors of IPPs that were developed under the Power Policy of 2002. He also conducted training sessions of Power Purchase Agreements for newly inducted officers of National Transmission and Despatch Company (NTDC).

**NTDC/WAPDA (WPPO) (2008-2011)**

#### *Deputy Director Technical*

He represented the power purchaser at NEPRA during the course of Tariff determination hearings for the Tariff petitions filed to NEPRA for the proposed projects under Power Policy 2002. In addition to this, he gave the inputs in the technical portion of PPAs and assisted with the finalization of PPAs.



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**NTDC/WAPDA (WPPO) (2002-2008)*****Assistant Director Technical***

He prepared the operating/test procedures for the gas turbine and diesel engine based power projects developed under Pakistan Power Generation Projects Policy 2002. He also witnessed the commissioning tests/Annual Dependable Capacity Tests of power projects developed under Power Policy 2002 & 1994. In addition this, he was involved with the implementation of Power Purchase Agreements (PPA) under Power Policy 1994. Moreover, he drafted policy for Small Independent Projects (SIPPs) which was approved by the Council of Common Interest (CCI), Government of Pakistan. He prepared the technical schedules for the Power Purchase Agreement (PPA) of the various projects of thermal and coal fired power projects, implemented under Power Projects Policy 2002.

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**Thermal Power Station, Muzaffargarh (1998-2002)*****Junior Engineer (O&M)***

He ensured the smooth operation of the plant. He was involved in the daily operations and maintenance of the power plant. He also carried out the emergency maintenance and troubleshooting of the thermal power project.

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**Thermal Power Station, Muzaffargarh (1993-1997)*****Junior Engineer (Electrical)***

He reviewed the design drawings and prepared the technical and contractual documents including the cost estimation of electrical works. He supervised and coordinated the installation of testing and commissioning of Electrical Systems of 2x210MW and 1x320MW Thermal Power Projects and the management of 2x210 MW TPS Project Muzaffargarh.

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**NGPS Piranghaib Multan (1992-1993)*****Junior Engineer (Operations)***

He monitored and ensured smooth operation of 4x65 MW Steam Turbine conventional power plant in accordance with the safety standards. He was responsible for the smooth start up of the turbine and remained active in the field to ensure uninterrupted operation of the plant.

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**WAPDA Engineering Academy, Faisalabad (1991-1992)*****Trainee Engineer***

He took a technical training for Generation, Transmission and Distribution of Electric Power at WAPDA Engineering Academy, Faisalabad. Also, he took a Basic Management Course that covered the Office and Project Management Techniques, Industrial Psychology, Commercial Procedures, and Report Writing.

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**Lahore Development Authority, Lahore (1991-1992)*****Assistant Director Engineering***



He took a technical training for Generation, Transmission and Distribution of Electric Power at WAPDA Engineering Academy, Faisalabad. Also, he took a Basic Management Course that covered the Office and Project Management Techniques, Industrial Psychology, Commercial Procedures, and Report Writing.

### EDUCATION

MSC	Electrical Engineering (Power), University of Engineering and Technology, Lahore, 2008
MBA	Management Information Systems, Preston University, Multan, 2000
BSC	Electrical Engineering, University of Engineering and Technology, Lahore, 1990

### TRAINING

Utility Regulation and Strategy, Public Utility Research Center (PURC) University of Florida, United States of America, 2009

Electrical Maintenance Training of 300 MW Thermal Power Plant, Hanchuan Power Station P. R. China, 1997

Sector Specific Training (Transmission & Distribution), WAPDA Academy Faisalabad, 2006

Project Preparation and Appraisal, Pakistan Institute of Development Economics Islamabad, 2005

Operation and Maintenance Training for Thermal Power Plants, NGPS Training Centre Multan, 1992

Technical Training for Generation Transmission & Distribution of Electric Power, WAPDA Engineering Academy Faisalabad, 1991

Basic Management Course, WAPDA Academy Tarbela, 1991

**AAMIR RASHID- MANAGER OPERATION (IT)****SUMMARY OF QUALIFICATIONS**

Mr. Aamir Rashid is one of the leading experts in the field of information technology (IT) related to power sector. He has total 26 years of experience in IT in which for 6 years on managerial positions in IT departments of WAPDA/PEPCO and NTDC/CPPA. He successfully completed majorly required projects of today's power sector like smart metering System (SMS), Synchronization of SMS with NTDC data center.

Currently he is dealing with independent power producers (IPPs) in claimed and verified invoices of energy and capacity payments and finalized the energy purchase price (EPP) and Capacity purchase price (CPP) of verified invoices from IPPs, GENCOs and Hydel.

**PROFESSIONAL EXPERIENCE****Central Power Purchasing Agency (CPPA)-G, Lahore****(2015-Present)*****Manager Operation (IT)***

Processes monthly claimed and verified invoices of energy and capacity payments from all Independent power producers (IPPs), covering the policies of 1994 and 2002. Finalized the energy purchase price (EPP) and Capacity purchase price (CPP) of claimed and verified invoices from IPPs, GENCOs and Hydel.

**Central Power Purchasing Agency (CPPA), Lahore****(2013-2015)*****Deputy Manager (IT)***

During this period he processed monthly claimed and verified invoices of energy and capacity payments from all IPPs (IPP 1994 policy & IPP 2002 policy). And finalized the Energy Purchase Prices (EPP) and Capacity Purchase Prices (CPP) of claimed and verified invoices from IPPs, GENCOs and Hydel. He was responsible for generation of financial data from claimed and verified invoices on monthly basis.



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**Central Power Purchasing Agency (CPPA), Lahore****(2010-2012)*****Deputy Manager (IT)***

During this tenure configured the multiple SIMSs for smart metering system (SMS) project and synchronized this project with NTDC Data Center. Communicate and coordinate with Technical services group (TSG) for SMS connectivity meter with NTDC Data Center. Worked with UET representatives for deployment of iPass application and correspond with Warid (Telecom Company) for issuance of new Warid SIMs with static IPs for SMS project.

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**Monitoring & Surveillance Division WAPDA/PEPCO, Lahore****(2001-2010)*****Assistant Director (Computer)***

Developed the computer application for the monitoring and record of various internal activities of civil and power projects and, auto-generated confidential/managerial reports for the use of director. Introduced and operationalized the auto-generated pay roll system for Monitoring & Surveillance (M&S) Division WAPDA/PEPCO.

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**WAPDA Computer Center, Lahore****(1997-2000)*****Assistant Director (Programmer/System Analyst)***

Proven skills in hardware software installation and troubleshooting. Worked on hardware software procurement and developed communication skills during coordination with customers departments of the organization and vendors. Theoretical and practical knowledge of COBOL on VMS under digital VAX system environment.

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**GM (PE&S) WAPDA Lahore****(1996-1997)*****Assistant Director (Programmer/System Analyst)***

Responsible for the uninterrupted operations of Machine room in the office of GM (PE&S) WAPDA.

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**Wapda Computer Center Lahore****(1995-1996)*****Assistant Director (Programmer/System Analyst)***

Worked on System Management, of Network Administration of LAN on VAX system.

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**Wapda Computer Center Lahore****(1990-1995)*****Assistant Programmer***

Responsible for Programming of different projects as a member of development team under Project Leader.



## EDUCATION

Post Graduate Diploma in Computer Applications, IQRA Computer College Lahore, 1990  
BSc. (Math-A, Math-B & Stats) University of Punjab, Lahore, 1989

## TRAINING

Junior Management Course (JMC), Wapda Staff College Islamabad, 2006

## REFERENCES

**1. EJAZ AHMED**

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Deputy Director (P/SA) WAPDA

**2. ASHER WASEEM**

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Deputy Manager (P/SA) PITC PEPCO

**3. AHMED SALMAN**

Tel: 03004387660

Deputy Director (Finance) WAPDA





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**WAQAR HUSSAIN – DEPUTY MANAGER (IT) DEVELOPMENT****SUMMARY OF QUALIFICATIONS**

Mr. Waqar has 30 years of diversified experience in the IT development of Power sector. He played an exceptional role in the organizational structuring of Central Power Purchasing Agency (Guarantee) Limited (CPPAG) and He prepared the manpower transition plan for CPPA-G. During his professional career, he worked with WAPDA, WCC, WPPO and NTDC. He also managed and maintained the invoices received by CPPA. Also, he was responsible for the management of computer systems and information technology operations. He also ensured the implementation of coordinate systems and technology.

Currently, as Deputy Manager (IT), he is responsible for the management and organization of IT, computer systems and electronic data operations. He manages the tenders of ERP and is part of the team that is responsible for the implementation of ERP. In addition to this, he is also involved with some managerial and administrative work. He also manages the invoices that CPPA-G receives from market participants.

**PROFESSIONAL EXPERIENCE**

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**Central Power Purchasing Agency (Guarantee) Limited (CPPAG)** (2016-today)

***Deputy Manager (IT)***

He is responsible for the management and organization of IT, computer systems and electronic data operations. He manages the tenders of ERP and is part of the team that is responsible for the implementation of ERP. In addition to this, he is also involved with the managerial and administrative work at the organization. He also manages the invoices that CPPA-G receives from market participants.

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**National Transmission and Despatch Company (NTDC)** (2011-2016)

***Additional Manager (IT)***

He managed and maintained the invoices received by CPPA. Also, he was responsible for the management of computer systems and information technology operations. He also ensured the implementation of coordinate systems and technology.

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**NTDC/WAPDA (WPPO)** (2010-2011)

***Deputy Director (IT)***

He managed the IT related problems in detail. In addition to this, he developed the database and maintained the record of decline of offer of Co employment under CE (Admin Power).



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**NTDC/WAPDA (WPPO) (2005-2010)**

***Deputy Director (Computer)***

He prepared the tenders of computer related equipment/services required for the smooth internal operations. He maintained the T&P and Manpower of DISCOs.

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**Pakistan Electric Power Company (PEPCO) (2003-2005)**

***Assistant Director (Computer)***

He reviewed rightsizing of Residual WAPDA (Head Offices) and prepared the prototype organizational charts of DISCOs (Tech).

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**WPPO Computer Center (WCC) (1994-2003)**

***Assistant Director (Computer)***

He worked as Assistant Director Computer, during this tenure he was relocated to many different many different cities like Peshawar, Mardan and Lahore,

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**WPPO Computer Center (WCC) (1986-1994)**

***Computer Operator***

During this period, he oversaw, maintained and operated the computer hardware systems. He also controlled console of mainframe digital computer or set of minicomputers. He performed maintenance tasks such as checking for viruses, backing up tape, upgrading software, and other basic maintenance. With same position, he was relocated to Jhang, Lahore and Islamabad.

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**WPPO Computer Center (WCC) (1983-1986)**

***Data Coordinator***

He organized the data in a way to help data analysts and manager (IT) to take decisions for further payments to generators. He collected and managed data so that it can be used to for further operation.

## EDUCATION

M.A (Political Science)  
L.L.B

## TRAINING

Nine weeks JMC training, Islamabad  
Mastering Software Development Using VISUAL BASIC, WCC, Lahore  
COBOL, WCC, Mardan.  
MYSQL



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ORACLE 11 G, PIM

#### REFERENCES

1. **Muhammad Khursid Alam**  
Director General (IT), CPPA-G  
Cell#:0347-4440244
2. **Hassan Touqir Bokhari**  
CEO, PITC  
Cell#: 0335-4260000
3. **Sohail Ahmed**  
Deputy General (IT), PITC  
Cell#: 0335-4445108

**SHOUKAT ALI – MANAGER (IT)****SUMMARY OF QUALIFICATIONS**

Mr. Shoukat has more than 34 Years of versatile management experience in the field of IT Operation in WAPDA and under the auspices of different WAPDA Computer Centers, National Transmission & Dispatch Company Limited. This experience is inclusive of 14 Years in WPPO in the field of Liquidity damages under 1994 policy.

Currently, he is maintaining Fox Pro Database for the calculation of Liquidity Damages IPPs under 1994 power policy, He controls day-to-day operations of computer directorate CPPA-G concerning Merit Order preparations, Liquidated Damages (LDs) calculation of eight different of IPPs named UPL, FKPCI, KEL JAPAN, HCPC, LALPIR, PAKGEN and LIBERTY with the assistance of Director (IT) on the basis of plant availability data received from NPCC.

**PROFESSIONAL EXPERIENCE****Central Power Purchasing Agency (Guarantee) Limited (CPPA-G), Islamabad (2015-Present)*****Manager (IT)***

He is responsible to control all IT Operations concerning databases for calculation of Liquidity Damages of IPPs Under 1994 Power Policy, preparation of LDs Invoices and merit order. He manages all scheduled and un-scheduled tasks with the correlation of my staff and seniors which are time bound and need careful vigilance and need expertise to perform precious, correct & concise calculation within specified time frame in the interest of agency. Also, he coordinates among Administrative, Technical & Financial sections dealing with IPPs under 1994 Power Policy.

**WAPDA Private Power Organization****(01/2011-2015)*****Deputy Manager (Computer)***

He was responsible for the calculation of LDs of HCPC, KEL, LIBERTY, UPL JAPAN, LALPIR, PAKGEN, FKPCl on the basis of their availability. Under 1994 power policy, power purchase agreement (PPA) were signed between WAPDA and Independent Power Producers (IPPs). After commissioning of the plants every month IPPs claim capacity charges from WAPDA through invoices on account of the plant Dependable Capacity. WAPDA pays a huge amount in this head and reserve the rights to withdraw that amount in the shape of Liquidity Damages if the company fails to deliver that capacity. So, the data received from NPCC was to be checked carefully and so was the calculation of LDs sent to the Technical section. He also prepared Merit Order for NPCC's implementation on fortnightly basis in respect of all IPPs.



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**WAPDA COMPUTER CENTRE HYDARABAD****(1994-2001)*****Assistant Director (IT)***

He was in charge of Machine room and was responsible for implementation of General, MDI and WAPDA employ Billing programs and handled all type of operations related to billing steps and control the sub ordinate staff of the Machine room as well .He was responsible to prepare the billing batch wise schedule issued from the Chief Office GEPCO and also processed the weekly Monthly and Quarterly reports for onward submission to WCC (Hqs.) Lahore for consolidation.

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**WAPDA COMPUTER CENTRE GUJRAT****(1990-1994)*****Assistant Director (IT)***

He was responsible for all billing operations and all types of hardware and software implementation. He was also the in charge of Machine room and was responsible for the implementation of General, MDI and WAPDA Employ Billing programs and to handle all type of operations relating to billing steps. He was responsible to prepare the batch wise billing schedule issued from the Chief Office PESCO. He also processed the weekly, monthly and quarterly reports for onward submission to WCC (Hqs.) Lahore for consolidation.

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**WAPDA COMPUTER CENTRE GUJRANWALA****(1987-1990)*****Supervisor***

He was responsible for the operation of billing and MIS reports on IBM & VAX installed at WAPDA Computer Centre Lahore. He performed the duty in shifts and gave outputs regarding billing and other reports as per the schedule and maintained the backup of soft data relating to billing and other reports.

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**WAPDA COMPUTER CENTRE GUJRANWALA****(1985-1987)*****Assistant Supervisor***

He was responsible for billing and MIS reports on VAX installed in WAPDA Computer Centre, Gujranwala. He performed the duties in shifts and gave outputs regarding billing and other weekly, monthly and quarterly reports as per schedule and maintained the backup of soft data relating to billing and other reports.

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**WAPDA COMPUTER CENTRE LAHORE****(1981-1985)*****Data Coordinator***

He was responsible for the data for billing received from different RO's offices and prepared it for billing and checked outputs received from Machine room with input data.



## EDUCATION

Graduation: Economics, Statistics, English University of the Punjab Lahore

## TRAINING

26th Junior Management Course at WAPDA Staff College, Islamabad, 1996

## CERTIFICATIONS\

VB +Micro Soft Office, (MAST) Master of Advance Sciences and Technology Secretariat  
Lower Mall, Lahore

## REFERENCES

**1. Mr. Hassan Touqir Bokhari**

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Finance Director, NTDCL, 540 WAPDA House, Lahore

**3. Mr. Rihan Akhtar**

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Tel: 92-347-4447705

Chief Financial Officer (CFO), CPPA-G, 229, WAPDA House, Lahore

**ATHER RASHEED HASHMI – MANAGER (IT)****SUMMARY OF QUALIFICATIONS**

Mr. Ather Rasheed Hashmi has more than 28 Years of diverse management experience in the field of IT development and Financial Management System implementation in an Autonomous organization of GOP i.e Water and Power Development Authority under the auspices of WAPDA Computer Centre, National Transmission & Dispatch Company Limited inclusive of 14 Years in WPPO before the signing of BTA in between NTDCL & CPPA-G subsequently followed by 1 Year with CPPA-G. He attained one year experience as Manager Computer in CPPA-G in addition to the present services rendered as Additional Manager (MIS) with DG (Finance) WPPO/CPPA-G since 2004. He is responsible to operate all MIS reports on the basis of expenditures incurred by CPPA-G to all IPPs under 1994 Power Policy. He achieved Masters Degree in Economics and also passed CSS Exam in 1989.

Currently, he is responsible for maintaining Database of all IPPs under 1994 power policy, all expenditures incurred for Energy Imports and received from Energy Export to IPPs. In addition to that, he controls day-to-day operations of computer directorate CPPA-G concerning to Merit Order preparations, invoice processing, Liquidated Damages calculation of all IPPs on the basis of their availability, Month wise Energy & Supplemental Information reporting to NPPC, PEPCO, CPCC and Ministry as desired from time to time. He performs distinctive management activities in the area of Technical and financial administration and supervises IT staff. He ensures that project resources are matched against the needs of agency for International development and by implementing team relationships, and identifies new ways to achieve efficiency and effectiveness towards accomplishment of all tasks assigned from time to time. He played active role towards advancement in the provision of latest IT equipment to Officers and Staff working under CPPA-G and also contributes towards the successful implementation of Enterprise Resource Planning in CPPA-G which is the need of modified and current power sector.

**PROFESSIONAL EXPERIENCE**

**Central Power Purchasing Agency Guarantee Limited (CPPA-G), Islamabad (2015-Present)**

***Manager (Computer)***

He is responsible to control all IT Operations concerning to maintain databases of EPP, CPP & Supplemental Invoices of all IPPs under 1994 Power Policy, preparation of LDs Invoices, Energy export Bills, Merit order. He manages all scheduled and un-scheduled tasks with the correlation of the staff which is time bound and need careful vigilance and expertise to perform precious, correct & concise calculation within specified time frame in the interest of Agency



work. He plays a coordinating role among Administrative, Technical & Financial sections and foreign factions dealing with IPPs under 1994 Power Policy.

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**WAPDA Private Power Organization****(2011-2015)*****Additional Manager (Computer)***

He was involved in the development of software in Visual Basic for more than 24 MIS Reports devised and implemented as desired by the Authority. He maintained IPPs Data base of all expenditures incurred by WPPO on IPPs in respect of EPP, CPP & Supplemental Invoices paid on monthly basis. He was responsible for making MIS reports of all payments made to IPPs prepared as desired by the Authority. He prepared Monthly Energy Purchased Data for NEPRA Tariff determination, reconciled MIS Reports with Payment Section, FD (NTDCL), Treasury Department & CPPA IT Section. He also evaluates information regarding Actual Cost Data and Month wise for CPCC Cell.

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**WAPDA Private Power Organization****(2004-2011)*****Deputy Manager (Computer)***

He was responsible for the maintenance of IPPs Database of all expenditures incurred by WPPO on IPPs in respect of EPP, CPP & Supplemental Invoices paid on monthly basis. He prepared Monthly Energy Purchased Data for NEPRA Tariff determination, reconciled MIS Reports with Payment Section, FD (NTDCL), Treasury Department & CPPA IT Section. He was also responsible for the preparation of Merit Order for NPCC implementation on fortnightly basis.

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**WAPDA Private Power Organization****(2002-2004)*****Deputy Manager (Computer)***

He was involved in the calculation of Liquidated Damages of SABA, Sepcol, HCPC and KAPCO. Also, he formed IPPs Data base of all expenditures incurred by WPPO on IPPs in respect of EPP, CPP & Supplemental Invoices paid on monthly basis received through MF-IV (Payments). He prepared Monthly Energy Purchased Data for NEPRA Tariff determination for onward submission to CPPA-G IT Cell for Consolidated Reports formation. He was involved in the reconciliation of MIS Reports with Payment Section, FD (NTDCL), and Treasury Department & CPPA IT Section. He was responsible for the Merit Order preparation for NPCC implementation on fortnightly basis in respect of all IPPs. He also did the initial workings of up to 250 CDPs from NTDCL Transmission network for on line Metering Data Acquisition System in order to Startup CPPA was performed by me.





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**GENERAL MANAGER Planning Power (NTDCL)****(2001-2002)*****System Administrator***

Maintenance of IBM RISC-6000 main Frame System deployed under GM Planning Power responsible for running Power System Simulator Energy (PSSE ver.23) software for analysis of Line losses, rehabilitation, Augmentation program and further connectivity with transmission line network of NTDCL. Managed to shift IBM RISC System Hardware and set up LAN System successfully from PIA Tower to WAPDA House Basement as desired by Authority personally without Vendor Intervention for office shifting purpose. Also augmented main frame system twice after transfer to WPPO in the Year 2003 duly acknowledged by the Authority.

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**WAPDA COMPUTER CENTRE GUJRANWALA****(1998-2001)*****Assistant Director (P/SA)***

Responsible for development and implementation of General & MDI Billing at Region Level. MIS Reports for CEO (GEPCO). Implementation of New Application Procedure at Division Level. Controller of Store Inventory System at Region & Circle Level. Bill & MIS Report printing month wise at region level and onward submission of reports to WCC (Hqs.) for consolidated MIS Reports.

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**WAPDA COMPUTER CENTRE LAHORE (Hqs.)****(1994-1998)*****Assistant Director (P/SA)***

Responsible for development of Batch-26 Ledger Programs on IBM & VAX Main Frame System initially worked with Director General (Computer Operations) as Co-ordination Officer for Three & Half Years and fulfilled responsibilities of Official Correspondence, Technical vetting & Inspection of all Hardware / Software procurement, Hardware Store maintenance & Disbursements etc.

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**DIVISION MANAGER (E) KAMOKI (GEPCO.)****(1988-1994)*****Assistant Programmer (P/SA)***

Responsible for supervising all Billing Operations at Division Level of Customers and New Application Procedures implementation and reports submission to Regional Computer Centre.

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**GENERAL MANAGER Planning (LDA Plaza)****(1988-1988)*****Assistant Programmer (P/SA)***

Responsible for Analysis of Rural Electrification program under ADB Planning Software.

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**EDUCATION**

MA Managerial, Statistics, Agri & Advance Economics, Islamia University Bahawalpur, 1989



BA Economics, Statistics, English University of Punjab Lahore, 1988.

### TRAINING

94<sup>th</sup> Middle Management Course, WAPDA Staff College, Islamabad, 2015

45<sup>th</sup> Junior Management Course, WAPDA Staff College, Islamabad, 2002

Capacity Building Training Program Course, PPRA, Islamabad, 2016

### CERTIFICATIONS

Financial Management Application for Managers, PIMS, Lahore, 2007

Micro Soft Skills for Managers, PIMS, Lahore, 2009

Data Processing – DTI, Lahore, 1988

### REFERENCES

**1. Mr. Atta ur Rehman**

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Tel: 92-347-4440104

Director General IT, CPPA-G, G-8, WAPDA House Lahore

**2. Mr. Farooq Shoukat**

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IT Director, NTDCL, 229 WAPDA House, Lahore

**3. Mr. Rihan Akhtar**

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Chief Financial Officer (CFO), CPPA-G, 229, WAPDA House, Lahore

## ANNEXURE - II

## Annexure-2

CVs of the consultants assisting CPPA-G have been enclosed in the following order:

Sr. No.	Title	Name	Overall Experience	Power Sector / Energy Markets Experience
1	Power Market (Senior Settlement and Regulatory) Expert	John Swinscoe	31	22
2	Power Market (Senior Settlement, Policy and Regulatory) Expert	Roberto D'Addario	36	29
3	Power Market (Senior Generation, Transmission and Distribution) Expert	Jorge Bircher -	37	37
4	Power Market (Senior Modeling and Simulations) Expert	Jorge Karacsonyi	42	42
5	Human Resources Expert	Alia Zafar	19	-
6	Energy and Demand Forecasting	Bilal Ahmad	36	36
7	Settlement System Team Lead	Alan G. Isemonger	21	18
8	Settlement System IT Infrastructure Expert	Ali Zain Ahmad	18	15
9	Trainer	Kasper Wallet	25	25



## JOHN SWINSCOE – PROJECT ADVISOR

### SUMMARY OF QUALIFICATIONS

Mr. John Swinscoe has 31 years of professional experience which includes the experience of 22 years in the power sector. He has worked in UK, Georgia, Egypt, Central Asia, East Africa, Pakistan and Ethiopia during his professional career. Since 2002, he has been working as independent consultant. Previously, he has worked for Powergen, Kinetica and Trade Indemnity Plc.

John managed a number of progressively complex issues related to electricity sector restructure and reform. He has in-depth experience in electricity trading and the development of the corresponding market rules and systems. In Egypt, he has worked as Energy Strategy Advisor and reviewed the 20 year Integrated Energy Strategy for Egypt covering Electricity, Gas, Oil and Oil Products, RES and Energy Efficiency strategy.

He has also worked as Senior Electricity Markets Expert at Georgia and provided assistance to Inogate Partner Countries for the development of electricity market model for Georgia. He was also involved in the Demand Forecasting in Kyrgyzstan.

In Pakistan, he was involved in the establishment and commencement of operations for the Central Power Purchasing Agency and is currently serving as the Team Leader and Settlement Expert for MRC Consultants Team at CPPA-G.

### PROFESSIONAL EXPERIENCE

#### MRC Consultants and Transaction Advisors

(2016-Present)

##### *Team Leader/Settlement Expert*

Currently, he is working as the team leader to the MRC Consultants at CPPA-G. He is involved with the development of the power market model for Pakistan.

#### Independent Consultant

(2002-2016)

During this period, he worked with a number of organizations as an independent consultant for market development. He worked as Energy Strategy Advisor at Egypt and reviewed the 20 year Integrated Energy Strategy for Egypt. He also worked as Senior Electricity Markets Expert at Georgia and was involved in the development of electricity market model for Georgia, development of Reactive Power tariffs for Armenia, analysis of requirements for adoption of the Energy Community Treaty for Georgia and the review and proposals for regulatory establishment of distribution losses for Moldova. In addition to this, he was involved in the demand forecasting



in Kyrgyzstan. Moreover, he worked as Team Leader in Mercados, Egypt and was involved in the capacity building of the Egyptian Electricity Regulator.

He also worked as Market Rules Expert in Addis Ababa and was involved in the capacity building, market design, preparation of market rules and commercial agreements. Moreover, he was also part of the team that was involved in the establishment and commencement of operations for CPPA-G in 2007-08.

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**Powergen (Now E.ON)** (1997-2002)

***Information Systems Manager, Industrial and Commercial Retail***

Design and delivery of systems and interfaces required to support customer acquisition, metering, settlement and collections for the 'New Electricity Trading Arrangements (NETA). Re-engineering of the associated business processes.

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**Kinetica** (1994-1997)

***Business Operations Manager***

Kinetica was a joint venture company owned by Conoco and Powergen and was established to take advantage of the deregulation of the UK gas market. He managed a team of 100+ staff to manage the acquisition of customers, metering, billing and collections of industrial and commercial gas customers in the market. He also developed the systems and re-engineering of business systems to meet the requirements of the UK Gas Network Code.

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**Trade Indemnity Plc.** (1985-1994)

***Programme Manager***

Specification, design and delivery of companywide IS System to manage all aspects of Credit Insurance underwriting, accounting, claims and salvage operations. He was also involved in the re-engineering of associated business processes and the selection and implementation of a re-insurance package.

## TRAININGS

Programme Management (Practitioner)

PRINCE2 Project Management Methodology (Practitioner)

SSADM V4 for Project Managers

Physical database design (IDMS-X)

Commercial Systems Analysis and Design



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**ROBERTO D'ADDARIO – PROJECT ADVISOR****SUMMARY OF QUALIFICATIONS**

Mr. Roberto D'Addario has 36 years of professional experience including 29 years of experience in the power sector. He has worked in Argentina, Benin, Bolivia, Brazil, Cambodia, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Ethiopia, Guatemala, India, Jordan, Kazakhstan, Myanmar, Nicaragua, Nigeria, Panama, Pakistan, Paraguay, the People's Republic of China, Peru, Russian Federation, Kingdom of Saudi Arabia, Sri Lanka, Tanzania, Trinidad and Tobago, Ukraine, Uruguay, Venezuela, Vietnam, Zambia and Zimbabwe during his professional career.

During his career, he has worked at MRC Consultants and Transaction Advisors, AF Mercados EMI Madrid (Spain), Mercados Energéticos, Buenos Aires (Argentina), Energy Secretariat of Argentina Federal Government (Argentina) and CAMMESA (Independent System and Market Operator Company) Argentina. He has worked at a number of places to develop the market models, regulatory framework and policies for many countries around the globe. His accomplishments include the development of the bulk supply code for the Jordanian power market, preparation of standard PPA and dispute settlement and enforcement procedure regulation for single buyer model market in Vietnam, Transmission costs study, identification of unit costs of transmission assets in Colombia, development of rules and regulation for Electricity Wholesale Market, Transmission System Access and Pricing and End User Tariff Regime for Uruguay.

**PROFESSIONAL EXPERIENCE****MRC Consultants and Transaction Advisors (2014-Present)*****Senior Energy Markets Expert and Lead Transaction Advisor***

He has been the facilitator in the Government Stakeholders and private investor consensus building to decide the privatization strategy to be followed for privatizing power companies, mostly identifying key drivers to be considered at the same time obtain efficiency improvements in the overall performance of the power Sector. Currently, he is involved in the development of the electricity market model for Pakistan to help it enter into the competitive regime.

**AF-Mercados EMI Madrid (Spain) (2003-2014)*****Director Corporate Development and Transaction***

He was the Founding Partner as well as the Director Corporate Development and Transaction. During this period, he has been involved in various projects around the globe. In Pakistan, he was involved in the establishment and Commencement of Operations for the Central Power Purchasing Agency (CPPA). In India, he provided Transaction Advisory Assistance to a leading hydropower developer. In addition to this, he was involved with the development and



implementation of the Principal Buyer for Saudi Electricity Company (SEC). He also provided Consultancy services in the establishment of the Nigerian Electricity Regulatory Commission (NERC). In addition to this, he provided advisory support to the Higher Council for Privatization (HCP) to corporatize and restructure Electricité du Liban (EdL) in Lebanon.

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**Mercados Energéticos, Buenos Aires (Argentina) (1993-2002)**  
*Executive Director, Restructuring and Regulation*

During this period, he served as the Technical Director of a project to develop the Technical and Commercial Operation rules of the wholesale electricity market and to structure organize and create the independent company in charge of the System and Market operation in El Salvador. He was also involved in the organization of the Market Operator (Unidad de Transacciones) and development of the Wholesale Electricity Market Regulation.

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**Argentinean Energy Secretariat Buenos Aires (Argentina) (1989-1993)**  
*Advisor*

He served as the advisor to the National Department of Coordination and Regulation in the organization and start-up of the Wholesale Electricity Market (MEM), and transmission privatization. He was also the charge of the management of the project that gave rise to the formation of the independent company created by the Electricity Law, responsible for the Argentine Market and System operation.

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**National Despatch Center, Argentina (1987-1989)**  
During this time, he held many managerial positions.





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**JORGE BIRCHER– PROJECT ADVISOR****SUMMARY OF QUALIFICATIONS**

Mr. Jorge Bircher has 37 years of extensive experience in the power sector. He has worked in Albania, Argentina, Armenia, Bangladesh, Belarus, Central Asia, Colombia, Dominican Republic, FYR of Macedonia, Egypt, El Salvador, EU, India, Jordan, Kenya, Kosovo, Lebanon, Maldives, Nigeria, Pakistan, Panama, Philippines, Poland, Saudi Arabia, Serbia, South East Asia, Spain, Tanzania, Turkey, Ukraine, Venezuela and Vietnam during his professional career. Previously, he has worked for Cidespa, S.A. Madrid and Segba (Argentinean Electric Utility) Buenos Aires (Argentina).

He has been involved with the Establishment and Commencement of Operations for the Central Power Purchasing Agency (CPPA) in 2007-08 in Pakistan. He worked in Bangladesh in a number of projects including the reviewing of the proposed options for power supply from the Indian Power Market. His work also included the review of the requirements for additional agreements for transmission network usage. In Egypt, he built the institutional capacity of Egyptian Electric Utility and Consumer Protection Regulatory Authority. In Jordan, he was involved in the development of the bulk supply code for the Jordanian Power System. In addition to this, he was also involved in the technical assistance for the Jordanian Electricity Regulatory Commission.

**PROFESSIONAL EXPERIENCE****MRC Consultants and Transaction Advisors****(2015-Present)*****Senior Power Systems Expert***

He has been involved with the Asian Development Bank (ADB) project of Power Transmission Enhancement Investment Program II. The assignment involves technical, economic, financial and social assessment of the project; due diligence of the MFF as well as the project (Tranche 1) impact, outcome, scope, cost, schedule and implementation arrangements; financial management assessment of NTDC; update the NTDC roadmap, strategic context, policy framework, investment program and interventions. In addition to this, he has been working with CPPA-G to develop the power market model that is best suited for Pakistan.

**AF-Mercados EMI Madrid (Spain)****(1999-2014)*****Director Network Industries***

During this time, he has been involved in a number of projects in various countries. In Pakistan, he was involved in the Renewable Energy Policy Formulation and Capacity Development with Alternative Energy Development Board. In Turkey, he provided assistance to TEIAS in the large-scale integration of wind power in the Turkish transmission grid. In addition to this, he has also



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served as the Project Manager and the Expert in Energy Regulation to European Bank for Reconstruction and Development (EBRD). During this time, he provided support to the Public Services Regulatory Commission (PSRC) for third party access to the electricity grid. Project manager and expert in energy regulation. (2009)

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**Cidespa, S.A. Madrid (Spain) (1989-1999)**

*Director - Consulting Division Management*

He gave the direction for over hundred national and international projects in the power sector during this period.

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**Argentinean Energy Secretariat Buenos Aires (Argentina) (1985-1988)**

*Coordinator*

He was the coordinator of a Multi-utilities Task force during this period.

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**Segba (Argentinean Electric Utility) Buenos Aires (Argentina) (1979-1984)**

*Analyst*

He was the analyst of the Planning Department Development of the power transmission and distribution network. Development of planning tools. Planning and Development of the Interconnected National Grid. He advised the Argentinean Energy Ministry on power system operation and planning.

## JORGE KARACSONYI – POWER MARKETS EXPERT

### SUMMARY OF QUALIFICATIONS

Mr. Jorge Karacsonyi has 42 years of extensive power sector experience. He has worked in Spain, Albania, Belarus, Russian Federation, Turkey, Ukraine, Greater Mekong Subregion countries (south east Asia), Pakistan, Philippines, Brazil, Argentina, Venezuela, El Salvador, Bolivia, Peru, Guyana, Panama, Honduras, Nicaragua, Uruguay, Chile, Ecuador, Costa Rica, Guatemala, Dominican Republic, China, Colombia, Tanzania, Indonesia, USA, Belize and Uganda during his professional career.

Mr. Karacsonyi has until recently been Executive Consultant in the Regulation, Restructuring and Public Policies Area and the Prices and Tariffs Area of Mercados EMI. He is an expert in regulation of the energy sectors, in the design and implementation of regulated markets for electricity and gas, and in tariff systems. He has been advisor to several governments and institutions, electricity and gas companies, multilateral financial agencies and NGOs in over twenty countries. As regards energy policies, institutional and regulatory affairs, he has provided assistance to governments in power sector reform processes in Latin America, Africa, Asia and Europe. He has worked in several Regional Power Market developments, such as in Central America (SIEPAC project); the Greater Mekong Subregion (South East Asia), for the ADB; the CIS countries power market, etc.

### PROFESSIONAL EXPERIENCE

**MRC Consultants and Transaction Advisors** (2016-Present)

***Power Markets Expert***

He has been working to develop the power market model for Pakistan to facilitate the transition in the competitive regime from the current market.

**AF Mercados Energy Markets** (2000-2016)

***Executive Consultant***

He was involved with the study of Operations and Commercialization Guidelines of the Interconnected System of the NEL Countries. Nile Basin Initiative (NBI) / Nile Equatorial Lakes Subsidiary Action Program (NELSAP). During this period, he also provided support to the Andean Electric Interconnection Studies - Regulatory Harmonization of the Electrical Interconnection of the Andean Countries (Bolivia, Chile, Colombia, Ecuador and Peru). In addition to this, he had also been working for the options for enhancing the Regional Power Trade in Central Asia.

**Argentina** (1999-2000)

***Secretary of Energy***

He served as the advisor to the Energy Secretary of Argentina.



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**Hagler Bailly S.A, Argentina**

**(1998-1999)**

*Vice President*

During this time, he was responsible for the Energy Practice in Latin America.

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**Estudio Q S.R.L.**

**(1990-1998)**

*President and Head of the Energy Sector*

During this time, he served as the President of Estudio Q S.R.L, Argentina.



## ALIA ZAFAR- HR CONSULTANT

### SUMMARY OF QUALIFICATIONS

Ms. Alia Zafar is an exceptional professional having the work experience of around 20 years. During her career, she has been involved with a number of renowned organizations including Hasoo Group, FBR, and HBL etc. Her expertise include leading the human capital strategy involving HR Planning, HR budgeting , training & capacity development, compensation & benefits, communication & stakeholders engagement. She is also experienced in organizational structure review, workload analysis and restructuring and building the internal communications strategy.

She is the member of Expert Lead for Pakistan on ISO 260 Task Groups (Human Governance, Sustainable employability and HR Terminology, Cost per hire, quality of hire). She is also the member Governing Council of Society of Human Resource Management (SHRM), Pakistan and the Member governing council of HR Forum, Islamabad.

### PROFESSIONAL EXPERIENCE

**MRC Consultants and Transaction Advisers (2015-Present)**

***HR Expert***

She has been involved with the organizational restructuring of CPPA-G since 2016 and has been providing the HR support in the management of HR related functions including the development of performance evaluation methods and the job descriptions etc.

**GemTechs Solutions Private Limited (2014-2015)**

***Executive Director Excelerate & CEO***

**Wi-tribe Pakistan (2011-2014)**

***Director Human Capital***

**HBL (2006-2011)**

***Dy. General Manager – Head HR Relationship Management***

She was the head of HR Relationship Management and was responsible for Organization Development & International Policy and Planning for North and Central Regions.

**Hashoo Group (2005-2005)**

***Corporate Head HR***



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**Federal Board of Revenue****(1994-2005)**

During this period, she has worked as Assistant Commissioner, Income Tax, Deputy Commissioner, Income Tax and Second Secretary.

**EDUCATION**

MBA	HR, PIMSAT, Islamabad, 2003
MA	English Literature, Punjab University, 1987



## BILAL AHMAD - CONSULTANT

### SUMMARY OF QUALIFICATIONS

Mr. Bilal Ahmad works as Forecasting Consultant to CPPA-G. He is an accomplished professional with the load forecast work experience of 28 years. During his professional career, he has prepared the Medium Term Forecast (7-10 years) in which he developed computer model For Medium Term Forecast Based on Power Market Survey (PMS). He also developed the PMS Model as Forecast Tool in (NPP Project 1992-1994) which was accepted as Medium Term Forecast Tool in National Power Plan Project (Pakistan). He had also prepared the forecast for 9th Five Year Plan in 1998. In 2003, his forecast was accepted as the National Forecast by the Government of Pakistan.

He also prepared the PMS forecasts for the updates on the National Power Plan in 1995 and 1996. Under his supervision, the PMS model was modified and improved for the preparation of forecast, for each distribution company and also for consolidated system i.e. (WAPDA). Moreover, he prepared Forecast Reports based on PMS Model. He has also been publishing separate report for each distribution company and a consolidated report for total system for each year since 1985.

Along with Medium Term Forecast, he had also prepared Long Term Forecast (up to 25 years) using Regression Analysis. He has been preparing long term forecasts since 1998. His forecast was accepted as the basis for the preparation of National Power system Expansion Plan for Pakistan 2011 (NPSEP).

He has also been the mentor and imparted training for DISCO Officers and Officials to Prepare PMS Forecast using data collection, processing of the data for input, input of the prepared data, preparation of the input parameters like losses, load factors, growth rates etc, running of the model and preparation of outputs and the preparation of forecast report for each DISCO. In addition to this, he had also trained Planning Engineers.

### EDUCATION

BSc	Electrical Engineering, UET
MBA	Finance, Iqra University



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## ALAN G. ISEMONGER- CONSULTANT

### SUMMARY OF QUALIFICATIONS

Alan G. Isemonger is an experienced professional with the work experience of more than 20 years. He has specialized in wholesale power markets. His particular focus is on issues that pertain to the design, functioning and outcome of wholesale power markets, with a special emphasis on financial outcomes and risk analysis. Recently, he spent four months at Kansas City Power and Light and in this role he looked at software and systems as they integrated with the SPP day-ahead market. This included business requirement gathering and documentation.

He has an experience of working with settlements, market performance monitoring and reporting, and managing the Congestion Revenue Rights (CRR) group. He has also been involved in the market monitoring with a wide-ranging, data-intensive, analytical function which attempted to discover anomalous results prior to them becoming significant issues.

He has also designed products for the spot markets; the design of trading hubs, the trade in ancillary services, and design elements for the CAISO's PJM-style market power mitigation. In addition to this, he has been involved with the analysis of the unusual market behavior and outcomes by market participants. In included the empirical data analysis, and also consisted of submissions to regulatory authorities, tariff support, and analysis related to tariff negotiations

### PROFESSIONAL EXPERIENCE

#### Independent Contractor

(2011-Present)

Since 2011, he has been working independently, often with other consulting firms, specializing in wholesale power markets in the WECC. In particular, he focuses on issues that pertain to the design, functioning and outcome of wholesale power markets, with a particular focus on financial outcomes and risk analysis. His recent accomplishments include the assistance to a firm with their CRR choices in the CAISO CRR market, assistance to a market trader (primarily virtuals and FTRs) to interpret settlement statements and market outcomes at the CAISO and provided support during their interactions with the CAISO. He has also been involved with the data analysis of public CAISO data in support of a significant new storage facility in the West. The work consisted of analyzing revenue streams and valuing them. He also analyzed the existing EIM business functionality, as well as the proposed new business functionality, and planning the business transition between them. This included the proposed FTR market (named TCRs in SPP), virtuals market, day-ahead and real-time markets, as well as the changes in risk management and settlements tasks due to the new business functions.





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**CAISO****(2006-2011)*****Manager, Market Information***

Over a period of about five years, he worked in the operations group and was responsible for a number of different market functions, including some settlements functions and market validation functions, during the period when the California ISO switched from a zonal market model to a nodal market model. The three main responsibilities though, were settlements, market performance monitoring and reporting, and managing the Congestion Revenue Rights (CRR) group. The settlements function was sizeable and he managed a smaller group that performed the expected energy calculations from the dispatch process. The market performance function was similar to market monitoring in that, it was a wide-ranging, data-intensive, analytical function which attempted to discover anomalous results prior to them becoming significant issues. The CRR group (a.k.a. Financial Transmission Rights or FTRs) was a monthly and annual allocation and auction of transmission line capacity that allowed market entities to hedge their day-ahead congestion risk. These groups were his main responsibility. In addition, he was also responsible for broadly managing market issues as they emerged, as well as the usual day-to-day managerial functions such as recruitment and personnel management.

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**CAISO****(2004-2006)*****Product Developer, Market Design***

As a product developer, he designed products for the spot markets for the CAISO's impending LMP redesign. Responsibilities included the design of trading hubs, the trade in ancillary services, and design elements for the CAISO's PJM-style market power mitigation. Work consisted of initial design, stakeholder presentations, final formulation, tariff support and testimony support.

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**CAISO****(2000-2002)*****Market Monitor***

As a market monitor, he analyzed unusual market behavior and outcomes by market participants. The work was generally empirical data analysis, but also consisted of submissions to regulatory authorities, tariff support, and analysis related to tariff negotiations. In addition, he often generated weekly and monthly reports on the CAISO market. He specialized in congestion issues, but also monitored ancillary services, outages, and real-time market outcomes.

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**ZE PowerGroup Inc.****(1998-2002)*****Economist***

As an economist, he had a number of different responsibilities ranging from analysis of acquisition strategies, to rate case analysis, rate design and risk analysis. The work also included the generation of weekly and monthly reports on the deregulated electric utility industry in the WECC. In addition, he also assisted municipal utilities, responded to the deregulated environment by auditing their workflow processes to determine optimal resource deployment.



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**BC Hydro****(1998-2000)*****Economist***

As an economist, he analyzed and monitored industrial client developments, such as mergers and acquisitions, assets sales etc. He also produced sectoral surveys of major industries for senior management, and planned and managed the switch from SIC (Standard Industrial Classification) to NAICS (North American Industrial Classification System).

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**Economic Research Unit****(1996-1998)*****Economist***

As an economist, he worked on a variety of trade and public policy projects mainly concerned with structural adjustment policies, trade switching and resultant revenue effects. The main clients were country governments in Southern Africa and aid organizations, such as USAID and the World Bank.

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**EDUCATION**

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MA	Development Economics, University of Leeds, England, 1993
BA	Social Science, University of Natal, South Africa, 1991

## ALI ZAIN BANATWALA - CONSULTANT

### SUMMARY OF QUALIFICATIONS

Mr. Ali Zain Banatwala has exceptional quantitative skills and has a professional experience of 20 years. During his career, he has been involved with a number of renowned organizations including Morgan Stanley Canada, E.ON, Asian Development Bank etc at multiple roles. Currently, he is assisting Ministry of Water and Power, Pakistan as a Smart Grid Expert.

His expertise include the power systems modelling and simulation dispatch optimization, grid integration of renewable energy sources, ancillary services, and steady-state & dynamic stability analysis. He also specializes in energy risk management; delta hedging of electricity schedules using market-traded products (e.g. base & peak forwards), asset optimization, pricing structured products, etc. In addition to this, he has expertise in Enterprise IT Systems; meter data management, distribution management systems, smart meter head-ends, billing and settlement systems, SCADA integration, databases, SAP. He has experience in Energy exchange APIs – APX/Endex (NL, UK), EEX & EPEXSPOT (GER, FRA), ICE (USA) and Programming, mathematical optimization, statistics, machine learning.

### PROFESSIONAL EXPERIENCE

**Asian Development Bank** (2016-2017)

*Smart Grid Expert for MWP*

He designed a Smart Grid Solution roadmap for Ministry of Water and Power, Pakistan.

**E.ON SE, Dusseldorf, Germany** (2015-2016)

*Manager, Market Information*

He managed the tools that involved handling and managing the market information and databases.

**E.ON Connecting Energies, Essen, Germany** (2013-2015)

*Portfolio Manager, Virtual Power Plants*

He analyzed powers market, contributed to enhancing both market knowledge and bidding strategy and thus, detected market opportunities. Also, he built the models to anticipate market and grid behaviors using appropriate inputs and algorithms.

**E.ON Global Commodities, Düsseldorf, Germany** (2008-2013)

*Senior Quantitative Developer – Portfolio Optimization and Modelling*



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In this role, he was involved with the portfolio optimization and modelling using quantitative analysis.

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**Morgan Stanley Canada, Montreal, Canada** (2005-2007)

***Quantitative Consultant***

He worked as a consultant to North American Power Trading, Westchester NY. During this time, he researched the issues related to optimization, portfolio construction and trading

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**CGI, Montreal, Canada** (2003-2005)

***Senior Consultant – Bell Canada, Montreal***

He served as the senior consultant at Bell Canada, Montreal.

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**Mitsui O.S.K. Lines, Karachi, Pakistan** (1997-2000)

***Economist***

His work included the econometric and data analysis.

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## EDUCATION

MSc	Electrical Power Systems, United Kingdom, 2016
MSc	Finance, London Business School, United Kingdom, 2008
BSc	Mathematics, Philosophy and Economics, Duke University, USA, 1996



## KASPER WALET – TRAINING CONSULTANT

### SUMMARY OF QUALIFICATIONS

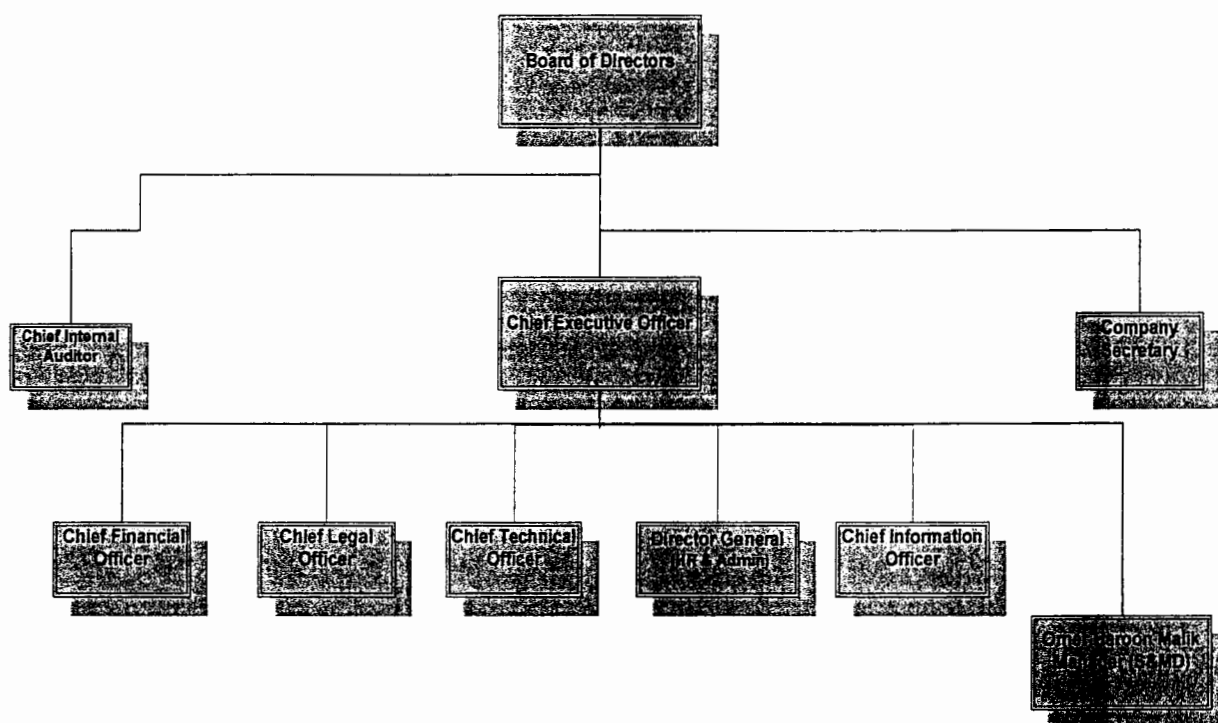
Mr. Kasper Walet is a skilled and accomplished professional with over 25 years of extensive senior management/board level experience in the energy markets worldwide. He has a strong expertise in all the aspects of (energy) commodity markets, international sales, marketing of services, derivatives trading, staff training and risk management within dynamic and high-pressure environments.

He has advised government agencies such as the European Commission, investment banks, major utilities and commodity trading companies and various energy exchanges and market places in Europe, CEE countries, North America and Asia. Some of the issues he has advised on are the development and implementation of a Risk Management Framework, Compliance and Insider Trading Policies, investment strategies, trading and hedging strategies, initiation of Power Exchanges (APX) and other trading platforms, the set-up of (OTC) Clearing facilities, and feasibility and market studies like for the Oil, LNG and the Carbon Market.

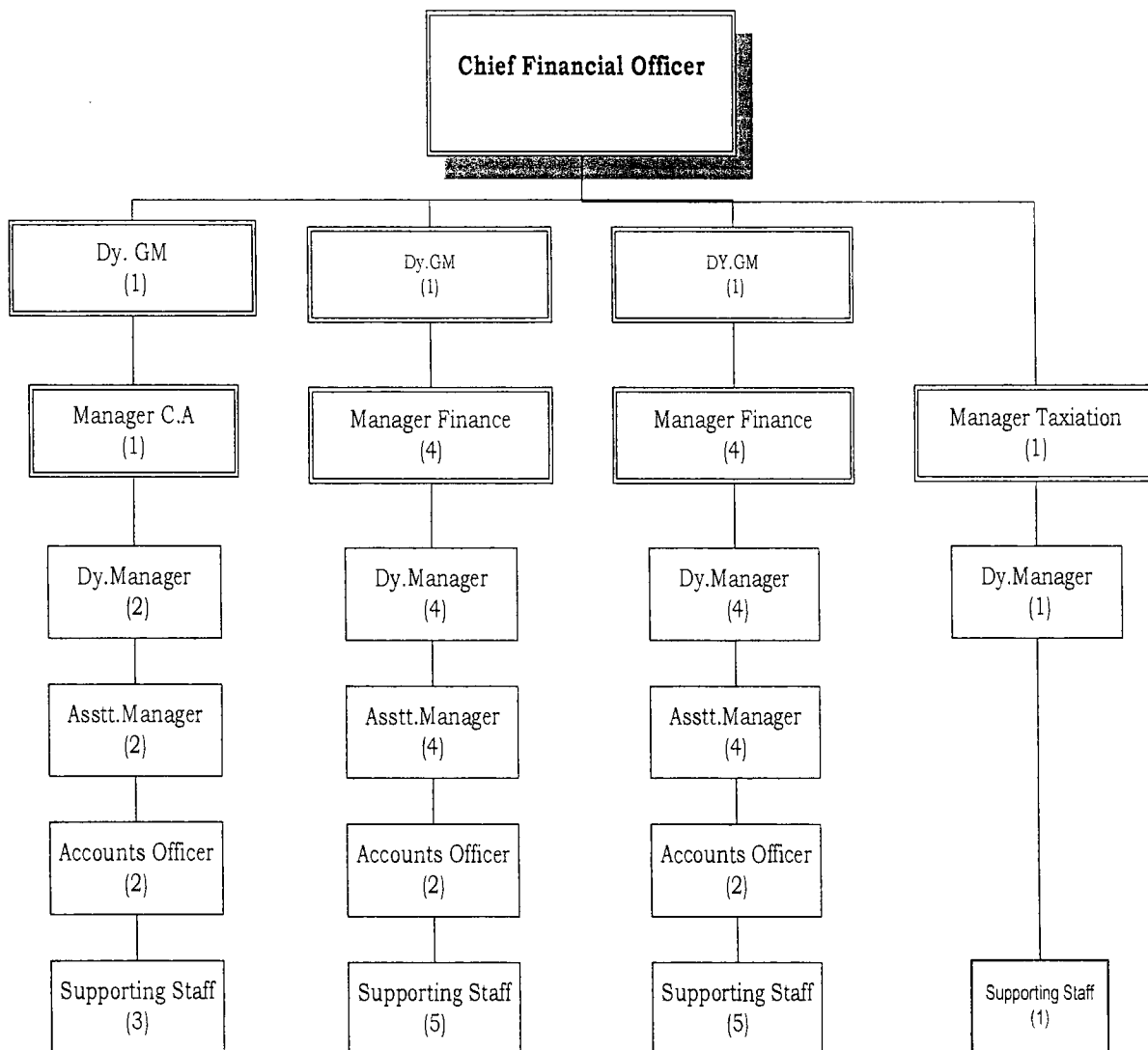
Next to advising (energy) companies, banks, consultants and regulators regarding PPAs, Kasper has also conducted several highly successful training courses about Power Purchase Agreements, power project finance, IPPs and project risk management to over 500 high level participants from Asia, Africa, Europe and the Middle East.

Kasper has published several articles in specialist magazines such as *Commodities Now* and *Energy Risk* and he is the co-author of a book called *A Guide to Emissions Trading: Risk Management and Business Implications* published by Risk Books in 2004.

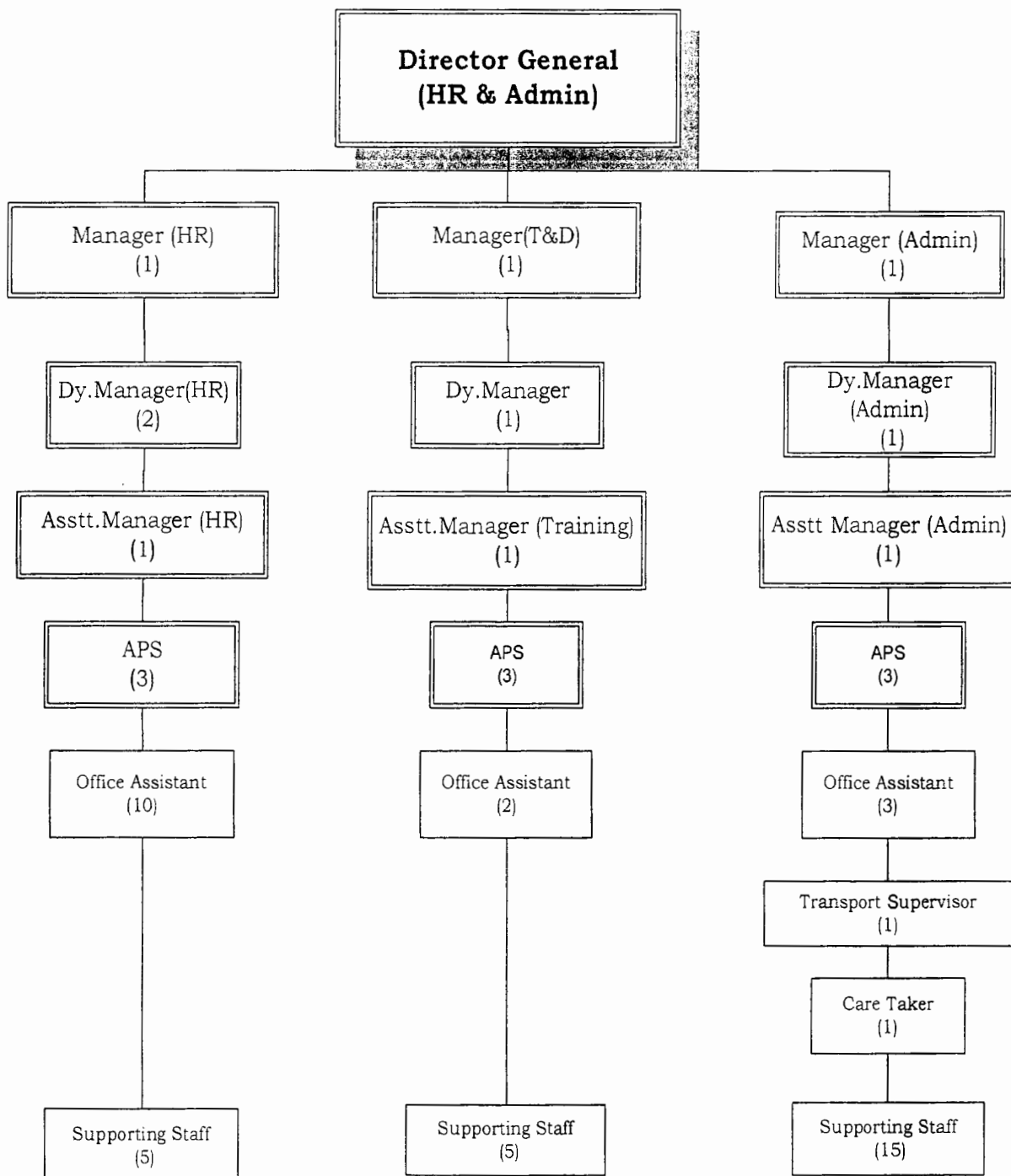
# ANNEXURE - III

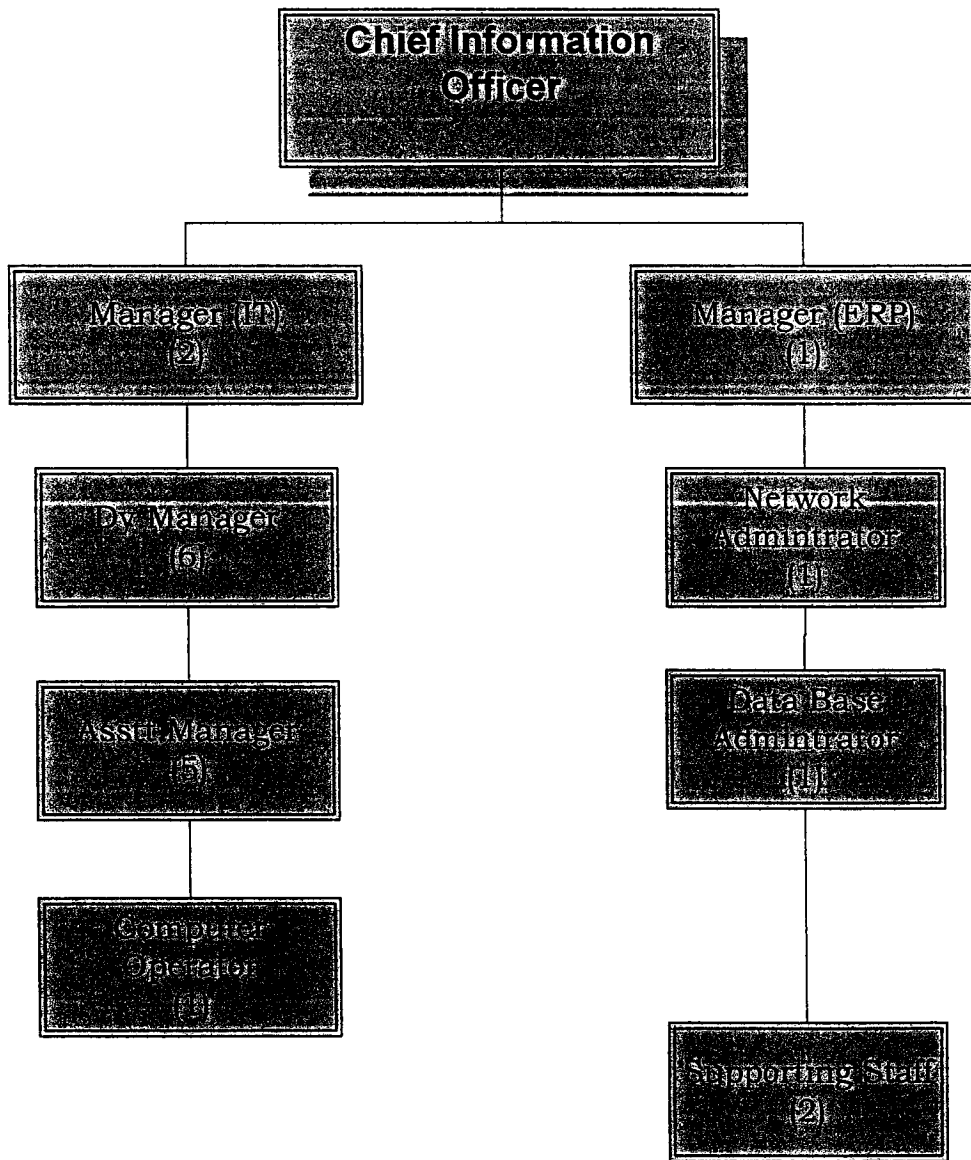


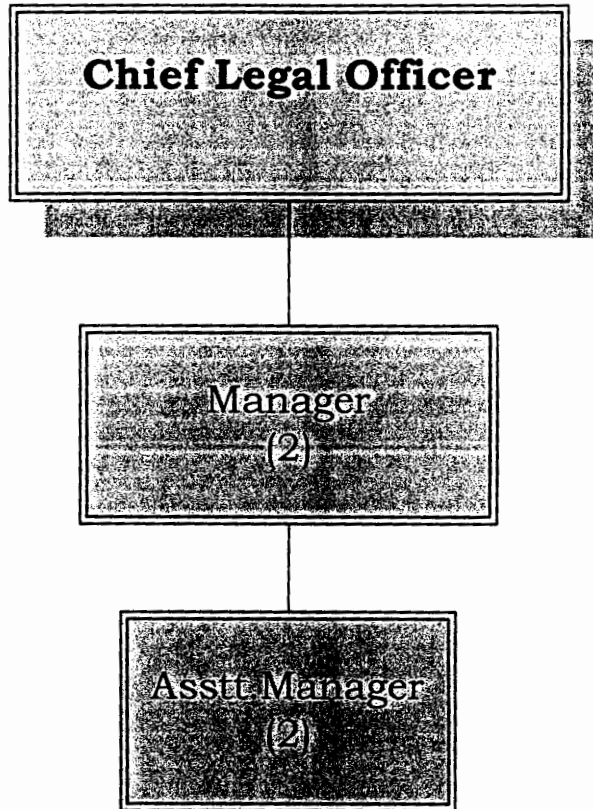
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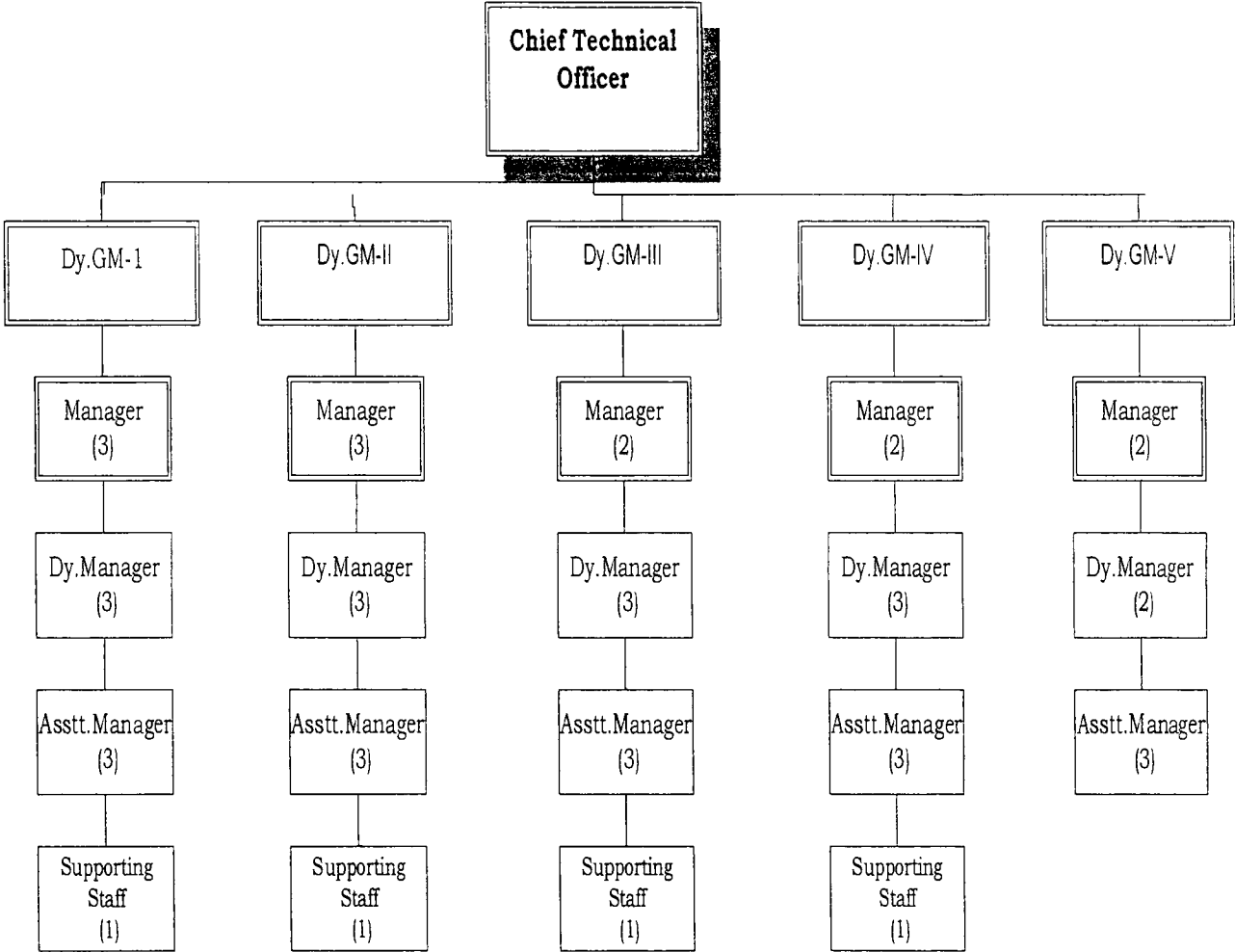


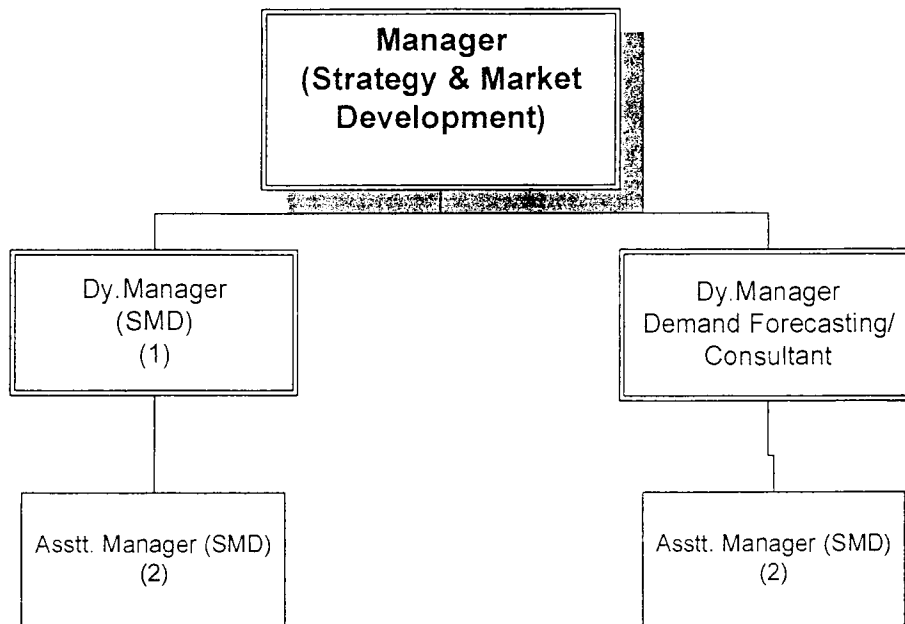






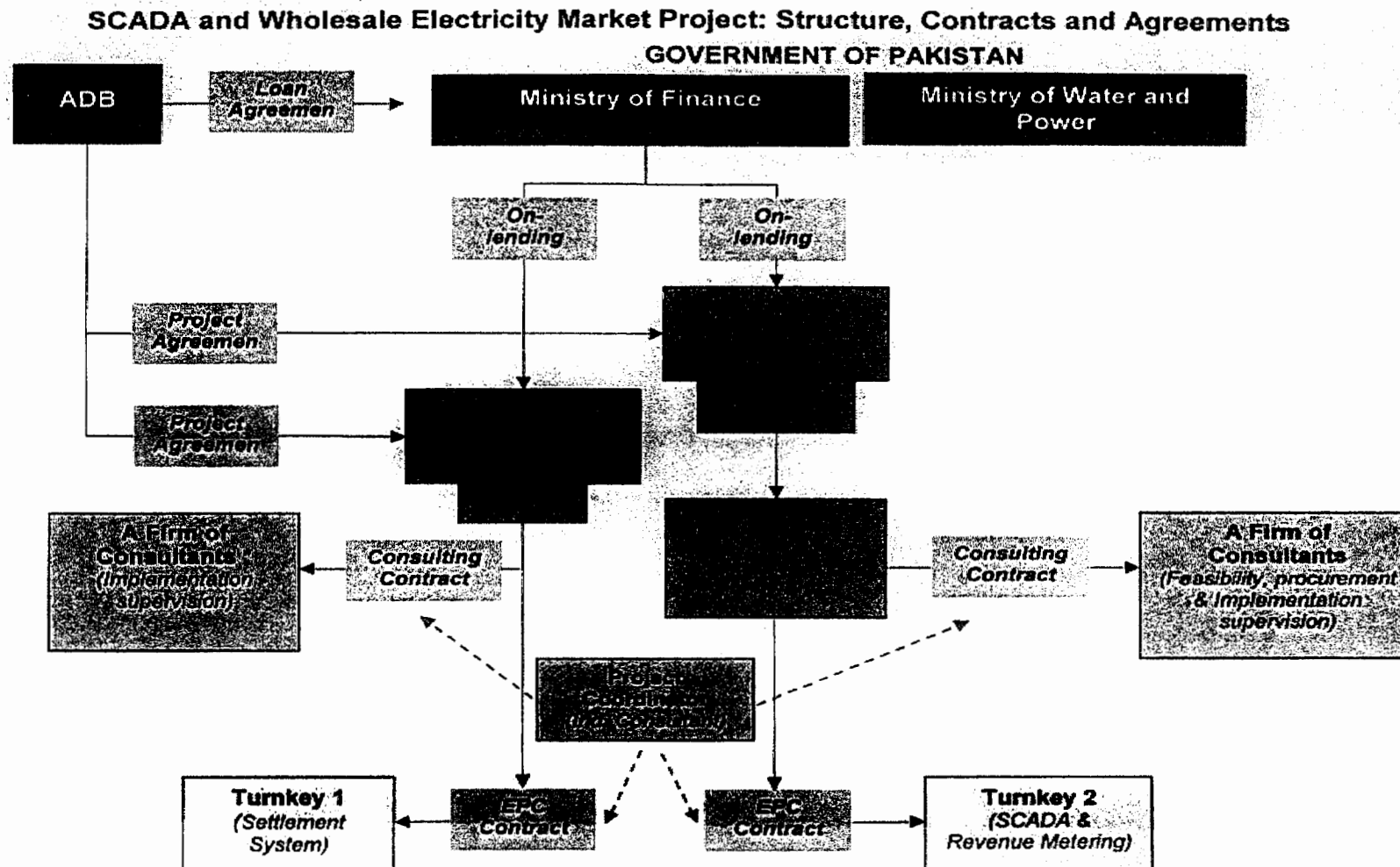




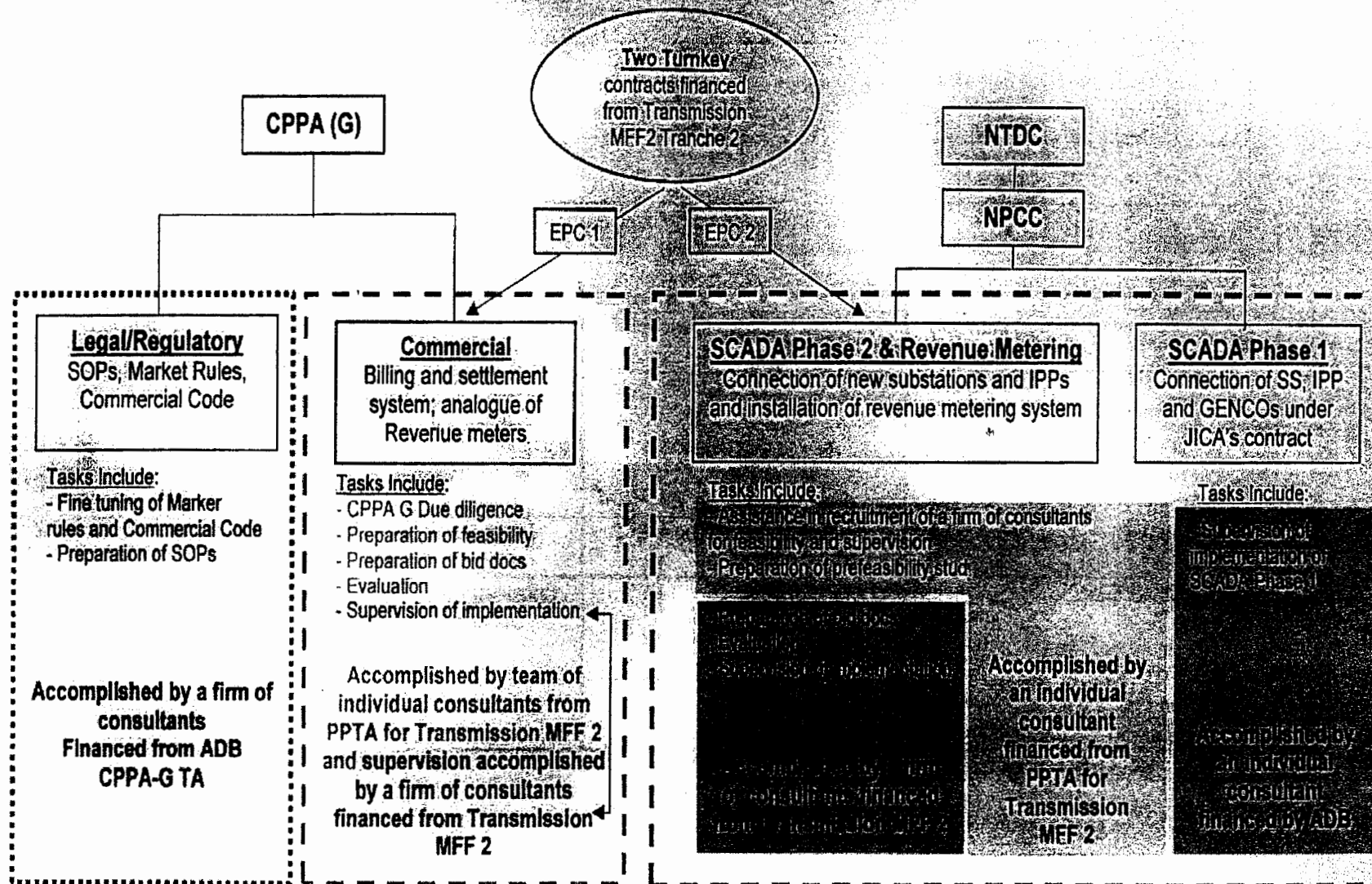


## ANNEXURE - IV

# Implementation of SFS and RMS project along with SCADA upgrade by NTDC



# SCADA and Wholesale Electricity Market Project: Consulting and Turnkey Contracts





## ANNEXURE - V

## Annexure-5

S.No.	Name	Type	Installed Capacity (MW)
1	Chiniot Power	Baggase	57
2	Etihad Power Gen	Baggase	67
3	Fatima Energy Limited	Baggase	118
4	JDW-II	Baggase	26.35
5	JDW-III	Baggase	26.35
6	Layyah Sugar Mills	Baggase	41
7	RYKML	Baggase	30
8	China Power Hub Generation Company Ltd	Coal	1320
9	Engro Powergen Thar (Pvt) Ltd	Coal	660
10	Lucky Electric Power Company	Coal	660
11	Port Qasim Electric Power Company	Coal	1320
12	Sahiwal Coal Project	Coal	1320
13	Siddiqsons Energy Ltd	Coal	330
14	ThalNova Power Thar	Coal	330
15	Thar Coal Block-1 Power Generation Power Project	Coal	1320
16	Thar Energy Limited at Thar	Coal	330
17	Allai Khwar	Hydel	121
18	Chashma	Hydel	184
19	Dubair Khwar	Hydel	130
20	Ghazi Barotha	Hydel	1450
21	Golen Gol	Hydel	106
22	Jagran (AJK)	Hydel	30
23	Jinnah	Hydel	96
24	Karot Power Company Pvt Ltd	Hydel	720
25	Khan Khwar	Hydel	72
26	Kohala (China International Water & Electric Company)	Hydel	1100
27	Laraib New Bong Esc.	Hydel	84
28	Malakand-III	Hydel	81
29	Mangla	Hydel	1000
30	Mira Power Ltd	Hydel	102
31	Neelum Jehlum	Hydel	969
32	S.K Hydro Pvt Ltd	Hydel	870
33	Small Hyrdo <25MW	Hydel	128
34	Tarbela	Hydel	3478
35	Tarbela 4th Extension	Hydel	1410
36	Tarbela 5th Extension	Hydel	1410
37	Warsak	Hydel	243
38	GENCO-IV Lakhra (COAL)	Lakhra Coal	30
39	CHASHMA NUCLEAR 1	Nuclear	301.28
40	CHASHMA NUCLEAR 2	Nuclear	315
41	Chashma Nuclear III	Nuclear	340
42	Chashma Nuclear IV	Nuclear	340

43	AES LALPIR	RFO/Gas/HSD/RLNG	350
44	AES PAK GEN.	RFO/Gas/HSD/RLNG	350
45	ALTERN POWER	RFO/Gas/HSD/RLNG	28
46	ATLAS POWER LIMITED	RFO/Gas/HSD/RLNG	214
47	ATTOCK GENEERATION LIMITED	RFO/Gas/HSD/RLNG	156.181
48	Ballloki	RFO/Gas/HSD/RLNG	800
49	Ballloki RLNG P-II	RFO/Gas/HSD/RLNG	400
50	Biki	RFO/Gas/HSD/RLNG	800
51	Biki RLNG P-II	RFO/Gas/HSD/RLNG	400
52	DAVIS ENERGY LIMITED	RFO/Gas/HSD/RLNG	9.79
53	Engro Power (GAS)	RFO/Gas/HSD/RLNG	213
54	FAUJI KABIRWALA	RFO/Gas/HSD/RLNG	151
55	FOUNDATION POWER CO DHARKI LIMITED	RFO/Gas/HSD/RLNG	168
56	GENCO-I	RFO/Gas/HSD/RLNG	830
57	GENCO-II	RFO/Gas/HSD/RLNG	1337
58	GENCO-III	RFO/Gas/HSD/RLNG	1410
59	GENCO-V	RFO/Gas/HSD/RLNG	425
60	HABIBULLAH COASTAL	RFO/Gas/HSD/RLNG	129
61	HALMORE POWER GENERATION CO LIMITED (GAS)	RFO/Gas/HSD/RLNG	207
62	Havilli Badar Shah	RFO/Gas/HSD/RLNG	800
63	Havilli Badar Shah RLNG P-II	RFO/Gas/HSD/RLNG	400
64	HUBCO	RFO/Gas/HSD/RLNG	1202
65	HUBCO-Narowal	RFO/Gas/HSD/RLNG	213.82
66	KAPCO	RFO/Gas/HSD/RLNG	1345
67	KOHINOOR ENERGY LTD	RFO/Gas/HSD/RLNG	124

68	LIBERTY POWER PROJECT	RFO/Gas/HSD/RLNG	213
69	LIBERTY POWER TECH LIMITED	RFO/Gas/HSD/RLNG	196
70	NISHAT CHUNIAN POWER LIMITED	RFO/Gas/HSD/RLNG	195.722
71	Nishat Power	RFO/Gas/HSD/RLNG	195.305
72	Orient Power (GAS)	RFO/Gas/HSD/RLNG	212.7
73	POWER GENERATION LTD	RFO/Gas/HSD/RLNG	116
74	ROUSCH	RFO/Gas/HSD/RLNG	395
75	SABA POWER COMPANY LTD	RFO/Gas/HSD/RLNG	126
76	SAIF POWER LIMITED (GAS)	RFO/Gas/HSD/RLNG	204
77	SAPPHIRE ELECTRIC COMPANY LIMITED (GAS)	RFO/Gas/HSD/RLNG	205
78	UCH	RFO/Gas/HSD/RLNG	549
79	UCH-II	RFO/Gas/HSD/RLNG	375.2
80	AJ Power (Private) Limited –	Solar North	12
81	Harappa Solar (Pvt) Limited- revised	Solar North	18
82	Appolo solar Development Pakistan – revised	Solar South	100
83	Best Green Energy Pakistan Limited – revised	Solar South	100
84	Crest Energy Pakistan Limited - revised	Solar South	100
85	Quaid-e-Azam Solar Power (Pvt) Ltd. - revised	Solar South	100
86	FFC ENERGY LIMITED	Wind	49.5
87	Foundation Wind Energy-I Private Limited	Wind	50
88	Foundation Wind Energy-II Private Limited	Wind	50
89	Gul Ahmed Wind Power Ltd.	Wind	50
90	Hartford Alternative Energy	Wind	50
91	Hawa Energy (Pvt.) Ltd.	Wind	50
92	Hydro China Dawood Power (Pvt.) Ltd.	Wind	49.5
93	Jhampir Power (Pvt.) Ltd.	Wind	49.6
94	Master Wind Energy Ltd.	Wind	49.5
95	Metro Power Company Limited	Wind	50
96	Sachal Energy	Wind	49.5

97	Sapphire Wind Power Company Ltd.	Wind	52.8
98	Tapal Wind Energy (Pvt.) Ltd.	Wind	30
99	Tenaga Generasi Ltd.	Wind	49.5
100	Three Gorges Wind Farm Pakistan Limited	Wind	49.5
101	UEP Wind Power (Pvt.) Ltd.	Wind	99
102	Yunus Energy Ltd.	Wind	50
103	ZORLU ENERJI PAKISTAN LIMITED	Wind	56.4
104	Zephyr Power Private Limited	Wind	49.5
105	Tricon Boston A	Wind	50
106	Tricon Boston B	Wind	50
107	Tricon Boston C	Wind	50

## ANNEXURE - VI

## The Power Markets Analysis

### **Brazil Power Market Evolution:**

Until 1995, the electricity sector in Brazil was vertically integrated. Through the Electricity Concession Law in 1995, which outlined a reorganization of the power sector, the Project for Restructuring the Brazilian Electric Sector was started. The goal of the reform was to privatize state-owned utilities. 65% of the electricity distribution companies were privatized in few years, while the transmission assets remained within state ownership. The enactment of Law 9648 in 1998 led to the creation of an independent operator, responsible for both the commercial market and the operation of the national transmission system. However, not all the objectives pursued were obtained and, for example, the increase in installed capacity continued lagging behind growth in demand. Installed capacity expanded only 28% during 1990-99, whereas electricity demand increased around 45%.

In 2004, the government implemented a second wave of reforms, known as the “new model”, to address some of the problems associated with incentives for installing new generation capacity, improving competitive conditions, and strengthening the institutional framework. The original reform model was characterized by opening up the power market with emphasis on the privatization of all the companies. The “new model” advocates for a coexistence between state-controlled and private companies.

### **Current Market:**

Today, Brazilian electricity model is fully competitive. Under this model, distributors are required to contract 100% of their expected demand. They can cover this demand using 4 different mechanisms:

1. Auction contracts circumscribed to "Old energy"<sup>1</sup> (long term)
2. Auction contracts for "New energy"<sup>2</sup> (long term)
3. Freely negotiated contracts (OTC) (long term)
4. Spot Market trades (size uncertain)

#### **1. Structure:**

Following organizations are the key players of the power market in Brazil:

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<sup>1</sup> “Old Energy” is an expression used in Brazil to refer to energy coming from plants already installed, which are not totally contracted, or which previous contracts have already expired.

<sup>2</sup> “New Energy” refers to energy coming from plants not developed yet (or which are under development). The developer takes the firm compromise to deliver the energy at a certain future date.

- **Regulator:**

ANEEL is the electric sector regulator and supervisory agency, created in 1996. It regulates all chain of the power sector.

The major functions of ANEEL include:

- **Regulation of Tariffs:** ANEEL regulates tariffs and establishes the general conditions for contracting the access and the use of electric power transmission and distribution systems by utilities and free consumers.
- **Regulation and Supervision:** ANEEL regulates and supervises the Brazilian Electricity Market. It is attached with Ministry of Mines and Energy (MME) and performs its operations in cooperation with it.

- **System Operator:**

The National Electricity System (ONS) is the system operator of Brazil and is a non-profit private entity. The ONS is under ANEEL's control and regulation and its functions include:

- **Coordination and Control:** ONS is responsible for the coordination and control of the generation and transmission installations in the National Interconnected System.

- **Market Operator:**

Power Commercialization Chamber (CCEE) is the market operator of Brazil. The initial role of the operator was to create a single, integrated commercial electricity market, to be regulated under published rules. The rules and commercialization procedures that regulate CCEE's activities are approved by ANEEL.

- **In-charge of Auction Systems:** CCEE is the in-charge of conducting all the auction processes, in which the distribution companies procure their power through long term contracts.

- **Power Research Company**

Power Research Company (EPE) was created in 2004 for performing the function of planning of the power sector. EPE is involved in developing an integrated long-term planning for the power sector in Brazil. Its mission is to carry out studies and research services in the planning of the energy sector in areas such as power, oil and natural gas and its derivatives; coal, renewable energy resources and energy efficiency, among others.

## 2. **Contracts/Financial Details in the Market:**

In the unregulated, "free market" (about 25% of the total market), independent power producers and large industrial consumers enter into long-term bilateral contracts. The regulated market is serving about 75% of the total electricity consumers and is operated by means of energy auctions.



### Effects:

Following effects were witnessed after the liberalization of the Brazilian Electricity Market:

1. **Investment in Generation:**

Investment in generation increased at competitive prices. Thus the power crisis that Brazil was facing in early 2000s that forced it to reduce the consumption of electricity, decreased. Also, it ensured the investment in the sector in the future.

2. **High Spot Prices:**

The prices in the spot prices increased which made it impossible for the distribution companies to charge to the consumers. Also, the generation companies that had committed contracted energy were exposed to high risk for those were apprehensive about the payments of their delivered energy.

3. **Power Crisis:**

The high spot prices and the economic crisis led to the power crisis of 2001 in Brazil. Huge demand of the country had to be shed. This provided an impetus to the reform of 2001 which obligated the DISCOs to contract 100% of their demand.

### **Nord Pool:**

Nord Pool is Europe's leading power market and offers trading, clearing, settlement and associated services in both day-ahead and intraday markets across nine European countries. It guarantees settlement and delivery. Nord Pool runs the largest market for electrical energy in Europe, measured in volume traded (TWh) and in market share. It operates in Norway, Denmark, Sweden, Finland, Estonia, Latvia, Lithuania, Germany and the UK. It was the world's first multinational exchange for trading electric power.

Nord Pool has 380 members in about 20 countries. More than 80% of the total consumption of electrical energy in the Nordic market is traded through Nord Pool. Members are public and private energy producers, energy intensive industries, large consumers, distributors, funds, investment companies, banks, brokers, utility companies and financial institutions.

### Evolution:

The Nordic countries deregulated their power markets in the early 1990s and brought their individual markets together into a common Nordic market which became the Nord Pool Market. Estonia, Latvia and Lithuania deregulated their power markets, and joined the Nord Pool market in 2010-2013.

Norway was the first of the Nordic countries to deregulate its power markets. The Energy Act of 1990 formed the basis for deregulation in the other Nordic countries. Statnett Marked AS was established as an independent company in 1993, for conducting trading in Norway. In 1995, the framework for an integrated Nordic power market contracts was made to the Norwegian

Parliament. This report coupled with Nord Pool's license for cross-boarder trading, this report made the foundation for spot trading at Nord Pool. As a result of this, in 1996, a joint Norwegian-Swedish power exchange was established which was later named, 'Nord Pool'.

It gradually started to expand and Finland, Denmark and Germany joined Nord Pool. In 2014, Nord Pool Spot takes sole ownership of the UK market. Later, Nord Pool was appointed NEMO in Belgium, Germany, Luxembourg and Poland. Nord Pool is together with IBEX opening the Bulgarian power market and together with Cropeex opening the Croatian power market.

### **Market:**

Nord Pool offers Intraday and Day-Ahead Trading Platform for the markets joining the Nord Pool.

- **Intraday Trading:**

Nord Pool offers continuous intraday trading of power products with physical delivery in the Nordic and Baltic regions, Germany and the UK. Prices are set based on a pay-as-bid basis for all transactions. In contrast to the common market clearing price in the day-ahead auction, the prices in the intraday market for the same product may vary during the trading period.

Acting as a balancing market to support the day-ahead market, Nord Pool intraday provides members with a place to further refine physical positions before final balancing measures are taken by the TSOs. Nord Pool's intraday markets offer 15 minute, 30 minute, hourly and block products providing the flexibility needed to meet the needs of the different market areas.

- **Day Ahead Trading:**

Nord Pool delivers efficient, simple and secure power trading in the Nordic, Baltic and UK day-ahead markets. The day-ahead trading platform is customized to meet individual market characteristics and offers; single hourly blocks, block orders, minimum acceptance ratio, linking, flexi orders and exclusive orders.

When making orders in the day-ahead market all volumes are stated in MW per hour.

Purchase orders are designated as positive numbers, sales as negative numbers. Trading is based on four different types of orders: Single hourly orders, Block orders, Exclusive groups and Flexible orders. The members can use any one or a combination of all order types to meet their requirements.

- **Settlement:**

All trades are settled according to a daily settlement schedule. For the purpose of financial settlement, members need to establish a designated bank account for settlement. The settlement of trades is done in the same currency as trading has been carried out in.

- **Contracts/Financial Details in the Market:**

During 2016, a total of 505 TWh of power was traded out of which 391 TWh was traded through day-ahead market in Nordic and Baltic regions, 5.1 TWh was traded through intraday in Nordic, Baltic and German Region and 109TWh was traded in the day-ahead of UK Power Market.

### **Spain Power Market Evolution:**

Spain has a long tradition of privately owned integrated electric utilities, which started to interchange power under bilateral agreements. In 1982, a separated network operator was established, which was in charge to optimize the generation dispatch at a national level, based on a “merit order” schema.

The complete transformation of the sector started in 1997, by issuing a new Electricity Law (Law 54/1997) which contained the most important elements of the restructuring. This new law created the legal environment for the new market, which was characterized by:

- Generation investments are freely decided by the private investors, without any restriction imposed by the government (other than obtaining the necessary local authorizations and environmental clearances);
- An organized wholesale market, with mandatory participation of all generation companies (gross pool); and
- Progressive liberalization of the supply business, with a calendar for allowing them to acquire the energy in the wholesale market or through independent suppliers.

As the introduction of this new regime may adversely affect the legitim interest of already established companies, a compensation mechanism was established consisting on additional payments to some of them in case the market price fall below a predefined value (Stranded Costs compensation), subject to a total maximum amount determined ex-ante. Originally expected to last for 10 years, it was cancelled before the final date.

### **Current Market:**

Currently, the electricity market is characterized by:

- A large number of generation companies;
- More than 50 distribution companies (although 4 of them distributed more than 99% of the energy);
- A single transmission company;
- A large number of traders and independent suppliers.

#### **3. Structure:**

Following organizations are the key players of the power market in Spain:

- **Market Operator:**

OMIE is the Market Operator of Spain and Portugal. It is the managing entity for the spot electricity market with daily and intra-daily transactions. Electricity sold and purchased at this market constitute binding obligations for the participants, despite

the adjustments that the system operator should later on instruct. The major functions of OMIE include:

- **Organization day ahead and intra-day markets (Spain).** It is in charge to clear volumes and prices in the market from purchase and sell orders submitted by the participants. Prices and volumes are determined hourly, both in the day-ahead and the intra-day markets.
- **Transaction Settlement:** Produce monthly settlements of all transactions performed in the market, based on the metering information provided by the System Operator.
- **Organization of financial derivatives market (Portugal).** Standardized financial products are traded, permitting the market participants to hedge the risks associated with price volatility.
- **Transmission Network Operator:**  
REE is the transmission owner and system operator. Its functions include the operation and maintenance of the transmission system; the proposal of an expansion plan (which needs to be approved by the Parliament); carrying out the investments in the transmission system, centralized operation of the system; running of the reserves and ancillary service markets; and settlement of the deviations of all market participants (balancing).
- **National Commission for Markets and Competition**  
The National Commission for Markets and Competition is the regulator of the system. It is responsible for preserving, guaranteeing and promoting the proper functioning, transparency and existence of effective competition in all markets and productive sectors for the benefit of consumers and users.  
It is a public body, attached to the Ministry of Economy and Competitiveness, but with total independency from the government. It is only subject to parliamentary and judicial control. It entered into operation in 2013, inheriting the functions previously performed by the National Energy Commission (CNE) and is performing the following functions:
  - **Promotion of Competition:** The organization is involved in the elaboration of studies and sector reports to favor competition with proposals for changes in regulations, so that there is more competition and regulation is more efficient.
  - **Supervision and Control:** It supervises and controls all economic sectors, in addition to assuming the functions of independent regulator provided by European directives in the economic sectors including energy.

#### 4. **Contracts/Financial Details in the Market:**

In 2015, total energy that was traded in OMIE was 258,854 GWh. Out of this, 31,880 GWh was traded in the Intraday Market and 226,974 GWh in the Daily Market.

5. **Promotion of renewable energies:** In addition to the ordinary market, there is a promotion mechanism established for fostering deployment of cogeneration and renewable energies (Special Regime). These producers receive a premium over the market price to compensate their higher investments.

#### **Benefits:**

Following benefits were achieved after the liberalization of the Spanish Electricity Market:

4. **Energy Security:**

After the introduction of liberalized and transparent market, the private investments in Spain significantly increased. Currently, there are three big generation companies that hold 55% of the generation market and many small generators.

5. **Increased eligible customers:**

Since 2003, all consumers in Spain are eligible and are able to make contractual arrangements independently with the retailers.

6. **Synchronization with European Market:**

Electricity markets in other European countries like Norway and UK had already been liberalized and without introduction of competition, it wasn't possible for Spain to be able to trade electricity conveniently from neighbors. Through the competitive regime and regional energy exchanges, it is made possible.

## **UK Electricity Market Evolution**

### **Need of Competitive Market:**

Prior to the liberalization in England, there was the state monopoly in the power sector. The Central Electricity Generation Board (CEGB) owned all generation and transmission assets, while the distribution business was managed by regional boards appointed by Government. The price controls were set by the Government and the market was fully regulated with integrated generation and transmission, and integrated distribution and supply. To improve the efficiency of the sector, the introduction of competitive market was necessary. Thus, UK decided to open the power market for competition.

### **Evolution:**

In 1947, there were 505 independent distribution companies which were merged into 12 regional boards. CEGB was responsible for generating and supplying electricity to the regional boards which supply electricity to the end consumer. This market structure continued till 1989 when Electricity Law was enacted. The Electricity Law aimed to liberalize the electricity market by separating the entities for generation, supply, transmission and distribution.

a) **Distribution:** The country was divided into twelve regional areas and one regional board was assigned to each area for the management of distribution network. Originally, the regional boards were state-owned and were sold to private investors in December 1990.

b) **Supply:** Initially, the twelve regional boards supplied electricity to their customers. But later, when the supply business expanded, the customers were given the liberty to choose their supplier. Currently, there are six big and several small suppliers in UK.

c) **Generation:** During liberalization, the generation of electricity was handed over to three different generation companies namely Powergen, National Power and Nuclear Electric. Initially, these three companies were state-owned but in 1995 National Power and Powergen were privatized. The Nuclear business was corporatized but the majority of shares remained with the government

d) **Transmission:** The transmission function of CEGB was handed over National Grid Company which was created to provide management of transportation in UK. This too was originally state-owned and privatized later.

e) **Wholesale Markets:** As a result of this liberalization and privatization, three wholesale markets were created in UK; England and Wales, Scotland and Northern Ireland. This gross pool functioned till 2001. In 2001, the prices increased by manifolds even though the cost of generation did not increase. Thus, to counter the situation, net pool was situation in 2001.

### **Market:**

There are 6 distribution network operators, 34 supply companies, 6 big generation companies and several small generation companies in UK. There is a single transmission company that manages the whole transmission network. There are 392 market participants in total and they trade electricity. There is a separate power exchange and market operator and one regulator in UK.

### **Current Structure:**

Following are the key organizations in UK:

- **Power Exchange:**

EPEX Spot is the power exchange in UK and was established in 2000. It provides the following platforms for trading:

- **Spot Market:** The spot market is used for balancing and trading purposes, consisting of day-ahead and intraday markets, of half hourly products of electricity as well as discrete standardized blocks made up of the individual half hours.
- **Prompt Market:** Prompt market offers base and peak load day products, weekend products and combination blocks.

- **Regulator**

OFGEM is a non-ministerial government department and an independent National Regulatory Authority. It is governed by the Gas and Electric Markets Authority, and is responsible for the following functions:

- **Polies and Strategies:** It determines strategy, sets policy priorities and makes decisions on a wide range of regulatory matters, including price controls and enforcement.

- **Regulation:** OFGEM regulates distribution and transmission networks and manages the commercial tender process for offshore transmission projects.
- **Supervision of Market:** It reviews and provides reforms for market efficiency in wholesale and retail markets.
- **Transmission Networks**  
There are three transmission networks in Great Britain, Scottish Power Transmission (Southern Scotland), Scottish Hydro Electric Transmission Ltd (Northern Scotland and the islands) National Grid Company (England and Wales). NGC is the System Operator for the whole of Great Britain and performs the following functions:
  - **Management of Transmission System:** NGC owns and operates the National Grid high-voltage electricity transmission network in England and Wales.
  - **Balance of Supply and Demand:** Balancing supply with demand on a minute-by-minute basis by providing the dispatch instructions.
- **Market Operator**  
ELEXON is the Market Operator of UK. It performs the following functions:
  - **Management of BSC:** Balancing and Settlement Code is managed and implemented by ELEXON.
  - **Settlement of Transactions:** It calculates, collects and settles all balancing market transactions.

#### **Statistics:**

The total generation in 2015 in UK was 339 TWh while the consumption was 303 TWh. Out of this volume, on average, 15% was traded through OTC.

#### **Benefits:**

By the establishment of the liberalized market and the separation of the transmission, generation, distribution and retail, UK has been able to break the monopoly over prices of one entity. Also, every consumer in UK is eligible and he can buy electricity from any retailer he wants which has achieved customer satisfaction. In addition to this, open market attracts investments and hence, energy security has been achieved.

## ANNEXURE - VII



## Becoming Member of Association of Power Exchanges - Approval



15 March 2017

Omer Haroon Malik ([Omerharoonmalik@gmail.com](mailto:Omerharoonmalik@gmail.com))  
Central Power Purchasing Agency (Guarantee) Limited (CPPA-G)  
6th Floor,  
Shaheed-e-Millat Secretariat,  
Jinnah Avenue, Blue Area  
Islamabad, Pakistan

Dear Omer Haroon Malik:

Congratulations! The Association of Power Exchanges (APEX) is pleased to inform you that the application for membership received from Central Power Purchasing Agency (Guarantee) Limited (CPPA-G) was accepted and approved by the Board of Directors.

APEX is an international association formed to facilitate development and communication of ideas and practices in the operation of global competitive electricity markets. One of the primary intentions of APEX is to provide a platform for members to share their knowledge and experiences and contribute to the development of Power Exchanges worldwide.

Every year, APEX holds an international conference that provides members the opportunity to network and gain a better understanding of Electricity Markets worldwide, while learning about the latest developments in Power Exchanges. This year the conference will be held in Brussels, Belgium on October 24-26, 2017. We hope that you will be able to attend!

If you have any questions regarding your APEX membership, please do not hesitate to contact me at [stu.bresler@pjm.com](mailto:stu.bresler@pjm.com) (610-666-8942) or my assistant at [Linda.spreeman@pjm.com](mailto:Linda.spreeman@pjm.com) (610-666-4651).

By separate email, a link will be sent for payment of the 2017 dues which can be remitted either by check or wire transfer.

Thank you again and please accept my warm welcome to APEX.

Sincerely yours,

Stu Bresler  
Chairman  
APEX

## **APPENDIX - I**

### The Registration Application Requirements As Laid Down in the Market Rules

**Rule 3. Registration of market operator.**— There shall be a market operator registered by the Authority and authorized to conduct the market operations, subject to the eligibility criteria set forth in sub-rule (2). Any entity desirous of being registered as a market operator and to be authorized to conduct the market operations shall make an application to the Registrar, which shall be accompanied by—

- (a) copies of memorandum of association and articles of association;
- (b) particulars of its chief executive officer and directors;
- (c) documents showing that satisfactory system and controls are available to conduct the market operations;
- (d) documents showing that adequate financial, technical, organizational and human resources are available to act as the market operator in a proper and efficient manner on an ongoing basis;
- (e) documents showing that sufficient contractual arrangements are in place to conduct the market operations;
- (f) draft commercial code; and
- (g) the fee as may be specified by the Authority; and
- (h) such other document as may be required by the Authority.

Articles and Memorandum of Association

## APPENDIX - II

1  
THE COMPANIES ORDINANCE, 1984

(XLVII of 1984)

*Company Limited by Guarantee, and  
Not Having a Share Capital*

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Memorandum of Association  
of

**CENTRAL POWER PURCHASING AGENCY  
(GUARANTEE) LIMITED**


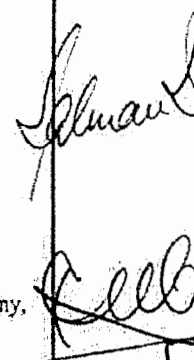
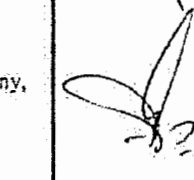
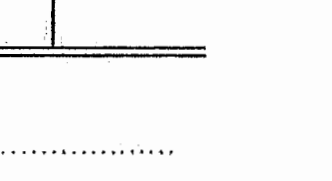

- I. The name of the Company is Central Power Purchasing Agency (Guarantee) Limited (hereinafter referred to as the Company).
- II. The registered office of the Company shall be situate in the Province of the Punjab.
- III. The Company shall function as a not-for-profit organisation, and the objects for which the Company is established are to implement and administer market mechanisms for electric power procurement and sale, by undertaking and performing functions and discharging responsibilities as are or may be laid down from time to time for the Company to undertake or perform in or pursuant to and in the manner prescribed under or pursuant to the provisions of the Regulation of Generation, Transmission and Distribution of Electric Power Act, (Act No. XL of 1997), and in the secondary legislation pursuant thereto, as amended from time to time, and to do all such other things as are incidental or conducive to the attainment of or in furtherance of the aforesaid objects and in furtherance of the policies, objectives and provisions of or contemplated under the aforesaid Act and secondary legislation made thereunder.

The income and property of the Company howsoever derived shall be applied solely towards the promotion of the objects of the Company as hereinabove provided and no portion thereof shall be paid or transferred directly or indirectly by way of dividend or bonus or otherwise by way of profit to the persons who at any time are or have been members of the Company or to any of them or to any person claiming through any of them; provided, that nothing herein contained shall prevent the payment of any remuneration to the employees, advisors or consultants of the Company or other persons in return for services actually rendered to the Company or of the reimbursement of expenses incurred in the business of the Company or, where authorized by the Articles of the Company, of the reimbursement of expenses and payment of charges for professional or extra services rendered by the Directors of the Company.

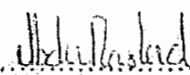
IV. The liability of the members is limited.

V. Every member of the Company undertakes to contribute to the assets of the Company in the event of its being wound up while he is a member, or within one year afterwards, for payments of the debts and liabilities of the Company contracted before he ceases to be a member, and the costs, charges and expenses of winding up and for the adjustment of the rights of the contributories among themselves, such amount as may be required not exceeding Rs. 1,000/- (Rupees One Thousand only).

We, the several persons whose names, addresses and descriptions are subscribed hereunder are desirous of being formed into a Company, in pursuance of this Memorandum of Association.

Sr #	Name and surname (present and former) Full Name (in Block Letters) with C.N.I.C. #	Father's / Husband's Name (in Full)	Nationality with any former Nationality	Occupation	Residential Address (in full)	Signature
1.	MR. FAZAL AHMAD KHAN C.N.I.C. # 35202-9275499-9	Ghulam Ahmad Khan	Pakistani	Service	9 - Aziz Avenue, Canal Bank, Lahore.	
2.	MR. MUHAMMAD ASHRAF BEHZAD C.N.I.C. # 35202-2185964-9	Muhammad Ismail	Pakistani	Service	253 - Sir Syed Street, Al-Hamd Colony, Allama Iqbal Town, Lahore.	
3.	MR. SALMAN IQBAL C.N.I.C. # 35202-1042997-7	Zahur Ahmad Shah	Pakistani	Service	199 - J, Izmir Town, Lahore.	
4.	MR. ZUBAIR JAVED C.N.I.C. # 35202-5455404-5	Ghulam Shabbir	Pakistani	Service	Banglow - 50, WAPDA Officers Colony, Upper Mall, Lahore.	
5.	AZHAR MASUD PANNI C.N.I.C. # 61101-1781652-1	Muhammad Akram Khan	Pakistani	Service	B - 39, WAPDA Officers Colony, Upper Mall, Lahore.	

Dated this 19..... day of January, 2009

Signature 

Witness to the above signatures :

Full Name : ABDUL RASHEED

C.N.I.C. # 35201-1344772-3

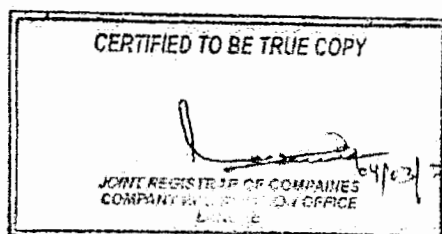
Father's

Full Name : MUHAMMAD BASHIR

Nationality : Pakistani

Occupation : Service

Full Address : 192 - Wapda House,  
LAHORE.





THE COMPANIES ORDINANCE, 1984

(XLVII of 1984)

*Company Limited by Guarantee, and  
Not Having a Share Capital*

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## Articles of Association

of

# **CENTRAL POWER PURCHASING AGENCY (GUARANTEE) LIMITED**

### 1. *INTERPRETATION*

#### 1.1 Definitions

In these Articles, unless the context or subject matter otherwise requires, the following words and expressions shall have the following meanings:

- (a) "Act" means the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (Act No. XL of 1997);
- (b) "Association of Distributors of Electricity of Pakistan" or "ADEP" means the association formed or to be formed duly registered under the law by the distributors of electricity in Pakistan who are duly licensed in this behalf by the Authority under the Act;
- (c) "Association of Generators of Electricity of Pakistan" or "AGEP" means the association formed or to be formed duly registered under the law by the generators of electricity in Pakistan who are duly licensed in this behalf by the Authority under the Act;
- (d) "Authority" means the National Electric Power Regulatory Authority, established under the Act;
- (e) "Board" means the Board of Directors;
- (f) "Company" means the Central Power Purchasing Agency (Guarantee) Limited;
- (g) "Directors" means the Directors of the Company;
- (h) "Ordinance" means the Companies Ordinances 1984;

- (i) "Secretary" means any individual appointed by the Board to perform the duties ordinarily performed by the secretary of a company;
- (j) "Seal" means the common seal of the Company; and
- (k) "Section" means a section of the Ordinance.

## 1.2 Rules of Interpretation

- 1.2.1 Words and expressions used but not defined herein shall bear the meaning given thereto in the Ordinance.
- 1.2.2 The provisions of the Ordinance shall apply in respect of all matters and things not provided for in these Articles and shall prevail in respect of any matter or thing provided in these Articles that is inconsistent with the provisions of the Ordinance.
- 1.2.3 Words importing the masculine gender include the feminine gender and words importing the singular number include the plural number and vice versa.
- 1.2.4 Expression referring to writing shall, unless the contrary intention appears, be construed as including references to printing, telegram, lithography, photography, electronic and other modes of representing or reproducing words in a visible form.
- 1.2.5 The provisions of "Table C" in the First Schedule to the Ordinance shall not apply to these Articles save to the extent these Articles reproduce or incorporate such provisions or save to the extent matters not provided for in these Articles are provided for in "Table C".

## 2. **MEMBERS**

- 2.1 The minimum number of members with which the Company proposes to be registered is five.
- 2.2 Forthwith upon receipt of their respective applications to become members, the subscribers to the memorandum shall admit to membership the following institutions, namely:
  - (i) the Federal Government;
  - (ii) the National Transmission and Despatch Company Limited;
  - (iii) Association of Distributors of Electricity;
  - (iv) Association of Generators of Electricity; and

(v) the Federation of Pakistan Chambers of Commerce and Industry;

and in consequence thereof the existing subscribers to the memorandum shall relinquish their membership in favour of the institutions mentioned in items (i) through (v) above simultaneously with their admission to membership such that the number of members does not fall below the number appearing in Article 2.1.

2.3 Pending admission to membership of the institutions mentioned in Article 2.2, the subscribers to the memorandum, and thereafter, such persons as the Directors shall admit to membership, shall be the members of the Company.

### 3. *GENERAL MEETINGS*

#### 3.1 Meetings of members

3.1.1 A general meeting of members, to be called annual general meeting, shall be held within eighteen months from the date of incorporation of the Company and thereafter once at least in every year within a period of four months following the close of its financial year and not more than fifteen months after the holding of its last preceding annual general meeting as may be determined by the Directors.

3.1.2 All general meetings other than annual general meetings shall be called extraordinary general meetings.

3.1.3 The Directors may, whenever they think fit, call an extraordinary general meeting subject to and in accordance with the provisions of the Ordinance.

### 4. *PROCEEDINGS OF GENERAL MEETING*

#### 4.1 Special Business

4.1.1 All business shall be deemed special that is transacted at an extraordinary general meeting, and also all that is transacted at an annual meeting with the exception of the consideration of accounts, balance-sheet and the reports of the Directors and auditors, the election or appointment of Directors and other officers and the fixing of remuneration of the auditors.

#### 4.2 Quorum

4.2.1 No business shall be transacted at any meeting unless a quorum of members is present at the time when the meeting proceeds to business.

4.2.2 Two members present in person who represent not less than twenty five percent of the total voting power in person or through proxy shall be a quorum.

4.2.3 If within half an hour from the time appointed for a meeting a quorum is not present, the meeting, if called upon the requisition of members, shall be dissolved. In any other case, the meeting shall stand adjourned to the same day in the next week, at the same time and place, or to such other day and such other time and place as the Directors may determine.

4.2.4 If at the adjourned meeting a quorum is not present within half an hour from the time appointed for the meeting the members present, being not less than two, shall be a quorum.

#### 4.3 Notices

Notices of general meetings shall be given in the manner provided in Section 160.

#### 4.4 Chair

4.4.1 The chairman, if any, of the Board of Directors shall preside as chairman at every general meeting of the Company.

4.4.2 If there is no such chairman, or if he is not present within fifteen minutes after the time appointed for the meeting or is unwilling to act as chairman of the meeting, the Directors present shall choose one of their number to be chairman of the meeting.

4.4.3 If at any meeting no Director is willing to act as chairman or if no Director is present within fifteen minutes after the time appointed for the meeting, the members present shall choose one of their number to be the chairman of the meeting.

#### 4.5 Adjournment

4.4.1 The chairman may, with the consent of any meeting at which a quorum is present, and shall if so directed by the meeting, adjourn the meeting from time to time and from place to place.

4.4.2 No business shall be transacted at any adjourned meeting other than the business left unfinished at the meeting from which the adjournment took place.

4.4.3 When a meeting is adjourned for thirty days or more, notice of the adjourned meeting shall be given as in the case of an original meeting.

4.4.4 Save as aforesaid, it shall not be necessary to give any notice of an adjournment or of the business to be transacted at an adjourned meeting.

#### 4.6 Poll

4.6.1 Unless a poll is demanded by at least two members present in person or by proxy or by any member or members representing not less than ten per cent of the total voting power in person or through proxy, a declaration by the chairman that a resolution has been carried or carried unanimously, or by a particular majority, or lost and an entry to that effect in the minutes of proceedings shall be conclusive evidence of the fact without proof of the number of votes recorded in favor or against the resolution.

4.6.2 Any business other than that upon which a poll has been demanded may be proceeded with, pending the taking of the poll.

#### 4.7 Votes of Members: Proxies

4.7.1 Every member shall have one vote.

4.7.2 A member of unsound mind, or in respect of whom an order has been made by any court having jurisdiction in lunacy, may vote, whether on a show of hands or on a poll, by his committee or other legal guardian, and any such committee or guardian may, on a poll vote by proxy.

4.7.3 No member shall be entitled to vote at any general meeting unless all moneys presently payable by him to the Company have been paid.

4.7.4 On a poll, votes may be given either personally or by proxy.

4.7.5 No objection shall be raised to the qualification of any voter except at a meeting or adjourned meeting at which the vote objected to is given or tendered, and every vote not disallowed at such meeting shall be valid for all purposes.

4.7.6 Any such objection made in due time shall be referred to the chairman of the meeting, whose decision shall be final and conclusive.

4.7.7 A vote given in accordance with the terms of an instrument of proxy shall be valid, notwithstanding the previous death or insanity of the principal or the revocation of the proxy or of the authority under which the proxy was executed; provided that no intimation in writing of such death, insanity or revocation shall have been received by the Company at its office before the commencement of the meeting or adjourned meeting at which the proxy is used.

4.7.8 An instrument appointing a proxy shall be in writing and shall be deposited at the office of the Company or the place of meeting at least forty-eight hours before the meeting at which it is to be used.

- 4.7.9 In the case of an equality of votes, whether on a show of hands or on a poll, the chairman of the meeting at which the show of hands takes place, or at which the poll is demanded, shall have and exercise a second or casting vote.

## 5. **BOARD OF DIRECTORS**

### 5.1 **Power and Duties of Directors**

- 5.1.1 The business of the Company shall be managed by the Directors, who may exercise all such powers of the Company as are not by the Ordinance required to be exercised by the Company in general meeting.

### 5.2 **Number of Directors**

- 5.2.1 The Board of Directors shall consist of not less than three (3) and not more than eight (8) Directors.
- 5.2.2 The initial number of Directors upon incorporation of the Company shall be five (5), and the natural persons who are subscribers to the memorandum shall be the first directors.

### 5.3 **Nomination and appointment of Directors**

- 5.3.1 Upon admission of the institutions mentioned in Article 2.2 to membership of the Company, the number of Directors shall ipso facto stand increased to eight (8), who shall correspondingly be appointed as follows:

- (i) the Federal Government shall have the right to nominate two (2) Directors, with one (1) Director representing the Ministry of Finance and the other representing the Ministry of Water and Power;
- (ii) the National Transmission and Despatch Company shall have the right to nominate one (1) Director;
- (iii) the Association of Distributors of Electricity shall have the right to nominate two (2) Directors;
- (iv) the Association of Generators of Electricity shall have the right to nominate two (2) Directors; and
- (v) the Federation of Pakistan Chambers of Commerce and Industry shall have the right to nominate one (1) Director, who shall represent the interests of large consumers of electricity in Pakistan.

- 5.3.2 Upon the occurrence of a vacancy amongst the Directors, the institution whose nominee Director's position has fallen vacant shall have the right to nominate the successor Director.

#### 5.4 Committees of Board of Directors

- 5.4.1 The Board may from time to time establish committees of its Directors to perform specific functions of the Board. A resolution of the Board establishing a committee of the Board may provide, inter alia, for the following matters, namely:

- the composition of the committee and its terms of reference;
- method for appointment of chairman of the committee;
- the quorum for meetings, procedures of the committee including its meetings and minimum number of meetings;
- the scope and extent of delegation of authority to the committees; and
- reporting requirements.

#### 5.5 Proceedings of Directors

- 5.5.1 The Directors may meet for the dispatch of business, adjourn and otherwise regulate their meetings, as they think fit.
- 5.5.2 A Director may, and the Chief Executive or secretary on the requisition of a Director shall, at any time, summon a meeting of the Directors.
- 5.5.3 Questions arising at any meeting of the Directors shall be decided by a majority of votes.
- 5.5.4 In case of any equality of votes, the chairman shall have and exercise a second or casting vote.
- 5.5.5 The continuing Directors may act notwithstanding any vacancy but, if and so long as their number is reduced below the minimum fixed by the Ordinance, the continuing Directors or Director may act for the purpose of increasing the number of Directors to that minimum or for summoning a general meeting of the Company, but for no other purpose.
- 5.5.6 All acts done by any meeting of the Directors or by any person acting as Director, shall, notwithstanding that it may afterwards be discovered that there was some defect in the appointment of any such Director or of any person acting as aforesaid, or that they or any of them were disqualified, be as valid as if every such Director or such person had been duly appointed and was qualified to be a Director.

5.5.7 A resolution in writing, signed by all the Directors for the time being entitled to receive notice of a meeting, shall be as valid and effectual as if it had been passed at a meeting of the Directors duly convened and held.

5.5.8 The requirement of a meeting of the Directors or a committee of the Board of Directors shall be satisfied where the meeting is held through video conference or teleconference such that the identity of the participating Directors and their voting can be and is ascertained, is recorded and is thereafter reproduced in the minutes of the meeting.

#### **5.6 Chairman of the Board**

5.6.1 The Directors may elect a chairman and determine the period for which he is to hold office within the limits prescribed by the Ordinance, provided always that, the offices of the Chief Executive officer and the chairman of the Board shall not be occupied by the same Director.

5.6.2 If no such chairman is elected, or if at any meeting the chairman is not present within ten minutes after the time appointed for the meeting or is unwilling to act as chairman, the Directors present may choose one of their numbers to be chairman of the meeting.

#### **5.7 Minute books**

5.7.1 The Directors shall cause minutes to be made in books provided for the purpose of all resolutions and proceedings at all meetings of the Company and of the Directors and of committees of Directors, and every Director present at any meeting of the Board or committee of Directors shall sign his name in a book to be kept for that purpose, provided that, for the purposes of Article 5.5.7, the requirement of signatures by the Director shall be met where such participation is confirmed by the Director subsequently in writing through facsimile or secure electronic mail transmission.

5.7.2 Minutes of any meeting or circular resolution recorded in the minute books and duly signed by the chairman shall be *prima facie* evidence of the accuracy of the contents of the minutes.

#### **5.8 Tenure of office**

5.8.1 Subject to the provisions of the Ordinance, the tenure of office of Directors shall be three years.

#### **5.9 Quorum**

5.9.1 The quorum for a meeting of the Board of Directors shall be one-half of the number of Directors or three (3) Directors, whichever is the higher number.



#### 5.10 Notice of meeting

- 5.10.1 Notice of a meeting of the Board of Directors shall be given at least seven (7) days before the meeting, unless for reasons recorded in writing the chairman consents to a shorter notice and a majority of the Directors present at the meeting resolve to proceed with the meeting.
- 5.10.2 A notice of a meeting shall specify in reasonable detail the business to be transacted at the meeting and where any papers, reports or other materials are to be considered at the meeting or a resolution is proposed for the meeting, copies thereof shall be provided to all Directors along with the notice of the meeting.
- 5.10.3 No business may be transacted at a meeting notice whereof has not been given in accordance with this Article 5.10 save where the Directors present at the meeting consent to such business being transacted or resolution being passed.

#### 5.11 Remuneration: expenses

- 5.11.1 The Board may from time to time resolve on ex ante or ex post facto basis payment or reimbursement by the Company of travelling, accommodation or per diem expenses and allowance for participation by Directors in meetings of the Board or committees of the Board.

#### 5.12 Access to Independent Advice

- 5.12.1 The Board or its committees may from time to time secure independent professional advice from analysts, consultants, legal and other advisers, and auditors, for purposes of the business of the Company, and the Board shall determine their fees and may accord approval for their out-of-pocket expenses.

### 6. *CHIEF EXECUTIVE*

- 6.1 The Board shall appoint a Chief Executive of the Company on terms and conditions determined by the Board.
- 6.2 Subject to the terms and conditions of his appointment determined by the Board, the Chief Executive shall hold office for a term not exceeding three (3) years and may be re-appointed by the Board.
- 6.3 The Chief Executive shall be responsible to manage the day-to-day affairs and operations of the Company. The Chief Executive shall be responsible for implementing the strategic directions and policies for the Company laid

down by the Board. The Chief Executive shall be supervised by and shall be responsible to the Board, provided that, the Board and its committees shall not become involved in the day-to-day operations and management of the affairs of Company and shall observe the distinction between Board functions to be performed by the Board and the management functions to be performed by the Chief Executive and other senior management officers appointed by the Board.

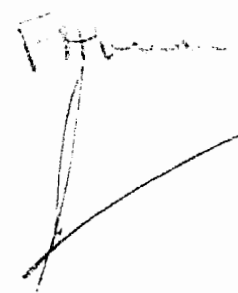
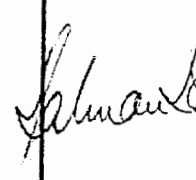
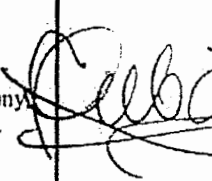


## 7. *THE SEAL*

- 7.1 The Directors shall provide a common seal of the Company which shall not be affixed to any instrument except by the authority of the resolution of the Board and two Directors or one Director and the Secretary shall sign every instrument to which the common seal is affixed.

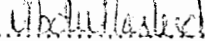
## 8. *WINDING UP*

- 8.1 In the event of the winding up or dissolution of the Company, its assets left after meeting its liabilities, if any, shall be transferred to another institution, trust or fund with objects similar to those of the Company and which is mentioned in the Second Schedule to the Income Tax Ordinance 2001 or any other law for the time being in force conferring tax-exempt status on not-for-profit entities under intimation to the Federal Board of Revenue within three months of the dissolution.

We, the several persons whose names, addresses and descriptions are subscribed hereunder are desirous of being formed into a Company, in pursuance of these Articles of Association.

Sr. #	Name and surname (present and former) Full Name (in Block Letters) with C.N.I.C. #	Father's / Husband's Name (in Full)	Nationality with any former Nationality	Occupation	Residential Address (in full)	Signature
1	MR. FAZAL AHMAD KHAN C.N.I.C. # 35202-9275499-9	Ghulam Ahmad Khan	Pakistani	Service	9 - Aziz Avenue, Canal Bank, Lahore.	
2	MR. MUHAMMAD ASHRAF BEHZAD C.N.I.C. # 35202-2185964-9	Muhammad Ismail	Pakistani	Service	253 - Sir Syed Street, Al-Hamd Colony, Allama Iqbal Town, Lahore.	
3	MR. SALMAN IQBAL C.N.I.C. # 35202-1042997-7	Zahur Ahmad Shah	Pakistani	Service	199 - J, Izmir Town, Lahore.	
4	MR. ZUBAIR JAVED C.N.I.C. # 35202-5455404-5	Ghulam Shabbir	Pakistani	Service	Banglow - 50, WAPDA Officers Colony, Upper Mall, Lahore.	
5	AZHAR MASUD PANNI C.N.I.C. # 61101-1781652-1	Muhammad Akram Khan	Pakistani	Service	B - 39, WAPDA Officers Colony, Upper Mall, Lahore.	

Dated this 11<sup>th</sup> day of January, 2009

Signature  .....

Witness to the above signatures :

Full Name : ABDUL RASHEED

C.N.I.C. # 35201-1344772-3

Father's

Full Name : MUHAMMAD BASHIR

Nationality : Pakistani

Occupation : Service

Full Address : 192 - Wapda House,  
LAHORE.

CERTIFIED TO BE TRUE COPY

JOINT REGISTERED OFFICERS  
COMPANY REGISTRATION OFFICE  
LAHORE

2015/1/13