



QUETTA ELECTRIC SUPPLY COMPANY LIMITED

Office of the Chief Executive Officer
QESCO, Zarghoon Road, Quetta Cantt:
Tele: 081-9202211

03 APR 2023

No. CEO/QESCO/14867

March 2023

The Registrar,
National Electric Power Regulatory Authority (NEPRA),
NEPRA Tower, Attaturk Avene (East), G5/1,
Islamabad

Subject: APPLICATION FOR GRANT OF AN ELECTRIC POWER SUPPLY LICENCE TO QESCO AS SUPPLIER OF
LAST RESORT (SOLR)

It is to submit that, the Quetta Electric Supply Company (QESCO) is Deemed Licensee for Supply of Electric Power as per proviso to Sub-section (1) of Section 23E of Regulation of Generation, Transmission & Distribution of Electric Power Act, 1997, amended up to date for period of five years which will expire on 30th April 2023.

Clause (1) of Section 23E of the Act " No person shall, unless licensed by the Authority under this Act, engage in the supply of electric power to the consumer" & in line with the regulation 3(2)(b) NEPRA Licensing (Electric Power Supplier) Regulations, 2022 notified as per SRO # 466(1)/2022, 28th March 2022, a deemed licensee has to make an application to the Authority / NEPRA at least 90 days before the expiry of the period.


In pursuance of Regulation 3(1) of NEPRA Licensing (Electric Power Supplier) Regulations, 2022 & in accordance with Regulation 3 of the NEPRA Licensing (Application, Modification, Extension, & Cancellation) Procedure Regulations, 2021 please find attached herewith the application for kind consideration of the Authority for grant of Electric Power Supply License to QESCO.

It is pertinent to mention here that, the BoD QESCO has authorized the undersigned in its 191/7 BoD meeting held on 22nd March 2023 vide item # 03 to sign the application and take all the necessary steps/actions regarding thereto.

Foregoing, in view of the above I, Engr. Abdul Kareem Jamali, Chief Executive Officer QESCO hereby request to the honourable Authority for grant of an **Electric Power Supply Licence to Quetta Electric Supply Company (QESCO) as Supplier of Last Resort (SolR) for 20 years** or more as deemed appropriate with humble request that the Authority may also kindly graciously condone the prescribed time line for filing Licence application for SolR due to the first time preparation of combined Power Acquisition Programme (PAP) for the period of **FY 2022-23 to 2026-27**.

D/A

1. Check list as per Regulation 3 (1) of the NEPRA Licensing (Application, Modification, Extension & Cancellation).
2. Cross Cheque amounting to (PKR 3,032,100/- 8% Tax) PKR 2,789,532/=
3. Board Resolution of the Company.
4. Affidavit of the CEO QESCO (Authorized Officer) on Non-Judicial Stamp Paper worth Rs. 100/- regarding the correctness, authenticity and accuracy of the application, documents, and information.
5. Affidavit of the CEO QESCO (Authorized Officer) on Non-Judicial Stamp Paper worth Rs. 100/- regarding the other Licences granted under the Act.


Engr. Abdul Kareem Jamali
Chief Executive Officer
QESCO, Quetta

Checklist as per Regulation 3 of NEPRA Licensing (Application, Modification, Extension and Cancellation) procedure regulations, 2021.

Sr. No.	Description	QESCO Remarks
1)	The type or category of license	Electric Power Supply License as Supplier of Last Resort (SoLR)
2)	The proposed time period of extension	Proposed time period is 20 years starting from May 01, 2023 to 30 April, 2042 or more.
3)	Prospectus	Attached as Annexure-A & B
	Certified copies of (a) Certificate of incorporation. (b) Memorandum and articles of association. (c) annual reports of the company	
5)	Last annual return of the company submitted in compliance of section 130 of the companies Act.	Attached as Annexure-C
6)	Evidence of adequate financial and technical resources available to the applicant for the purpose of undertaking related electric power services for which application for grant of license has been filed, including evidences of cash balance held in reserve by applicant's assets, if any; latest audited financial statements of the applicant; expression of interest to provide credit of financing along with sources and details thereof, documents describing the net worth and the equity and debt ratios of the applicant, as on the date of the audited balance sheet accompanying the application.	Audited Financial report for F.Y 2021-222 attached as Annexure-D
7)	Detailed profile of the applicant and the applicant's Senior management. Technical and professional staff.	Summary abstract (Name, Destination, Experience, Qualification) of Management officers attached as Annexure-E.
8)	Application fee as set out in Schedule-II (Fees for Grant, extension of term or Modification of license)	Cross Cheque of HBL Bank vide Cheque # <u>00030264</u> Dated <u>03.04.2023</u> Amounting to Rs 2,789,532/- In Favor of Registrar NEPRA is attached, being the net of 8% tax withheld of gross amount Rs 3,032,100/- as set out in schedule II of the regulation as applicable fee.
9)	Applicable documents in support and information set out in Schedule-III for Electric power supply.	Following attached as Annex-F (i) Relevant Feeder Maps, Number of Consumers and expected load.

		<p>(ii) Consumer Class/category, sub-category on the basis of sanctioned load and voltage level.</p> <p>(iii) Tariff categories of consumer classes to be served.</p> <p>(iv) demand and consumption pattern on different time periods</p> <p>(v) 12-months projections on expected load, number of consumers and expected sale of units for each consumer category.</p> <p>(vi) Procurement plan for meeting expected loads (Annex-G).</p> <p>(vii) Trainings and development (Annex-HI).</p> <p>(viii). information related to:</p> <ul style="list-style-type: none">a) Proposed service territory (Annex-JK & L).b) Billing and collection procedures (including provisions for remote metering) (Annex-M)c) Ability to access consumer metering systems and other services/equipment (Annex-N).d) Emergency provisions and protocols (Annex-O)
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QUETTA ELECTRIC SUPPLY COMPANY LIMITED

Phone # 081-9203308
Fax # 081-9201335

*Office of the Company Secretary,
QESCO Zarghoon Road Quetta.*

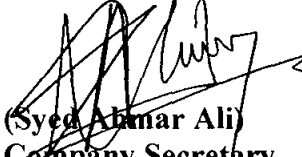
No. 2562 CS/QESCO/BoD/

Dated: 27-3-2023

Board Resolution

BoD QESCO in its 191st/7th meeting held on 22nd March 2023 resolved and approved filing of application before NEPRA for Grant of Electric Power Supply License as Supplier of Last Resort (SoLR) and authorized CEO QESCO to sign all documents, present the case before NEPRA Authority along with his team and do all necessary acts for completion.

Certified True copy


(Syed Ahmar Ali)
Company Secretary
27/3/23

PROSPECTUS

QESCO (Quetta Electric Supply Company) is an electric distribution / supply company & has prime responsibility to ensure safe, reliable and uninterrupted Power to residential, commercial and industrial customers in its service area.

After the de-centralization of WAPDA in 1998, Quetta Electric Supply Company Ltd. (QESCO) took over the business of all liabilities, assets, properties etc from formal Area Electricity Board Quetta and started working and dealing with the Distribution & Supply of Power to Industrial, Commercial, Public Sector & Residential customers under the Electricity Act, 1910 & NEPRA Act, 1997 (as amended to date) to its licensed areas i.e. 34 x Districts in whole Balochistan except District Lesbella (being fed from KE) which is 43% of the country's area.

Vision Statement

To make power sector of Balochistan Province customer friendly, efficient, able and responsive in meeting the electric energy requirements of domestic, agriculture, commercial and industrial customers and move to an energy sufficient model from the current energy deficient scenario on commercially viable and sustainable basis.

Mission

To provide un-interrupted electricity to the customers with the help of devoted workmanship.

Objective

- Be self-reliant and independent entity.
- Expand infrastructure to commensurate the consumer growth.
- Provide stable and reliable electricity.
- Institute surveillance system to curb theft/illegal activities.
- Provide efficient customer services to ensure consumer satisfaction .
- To keep the line losses within permissible limits.
- To ensure 100% recovery.
- Motivate employees.
- Provide training and development.
- Do efficient material management.

PROSPECTUS

Management Philosophy

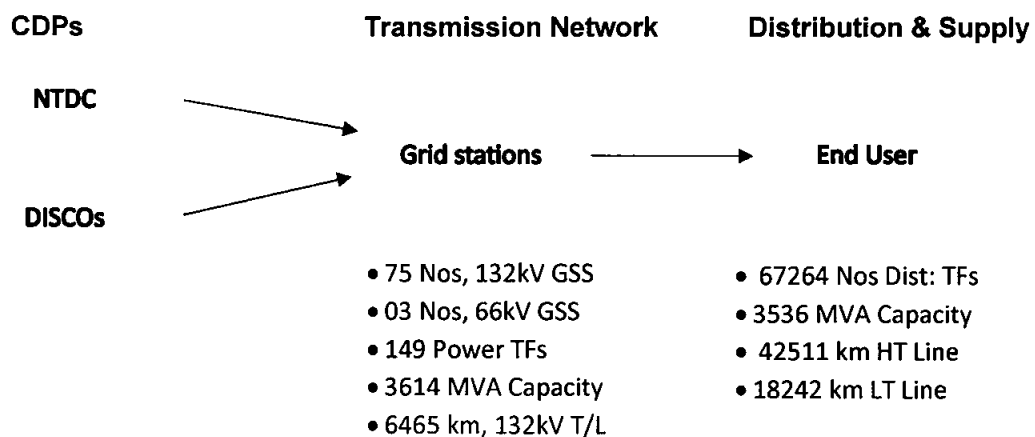
- Open door policy for all.
- Tackle all problems upfront.
- Merit, Justice, Fair play is the hallmark.
- Transparency in all fields and accountability of everyone

OUR COMMITMENT

- To improve customer satisfaction.
- To reduce line losses.
- To increase revenue generation.
- To improve performance standards.

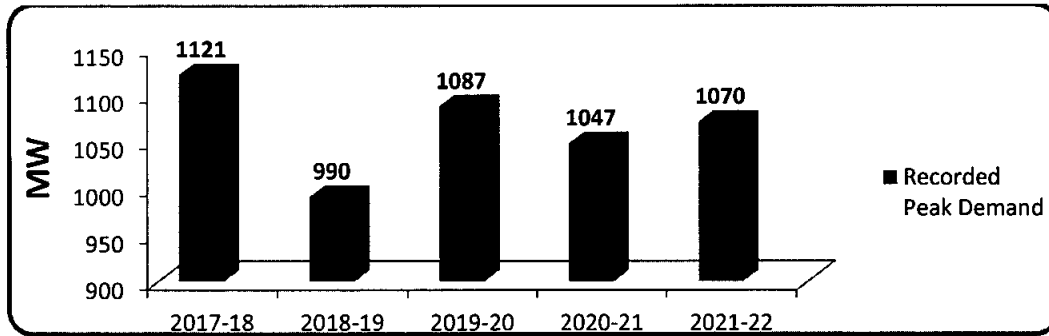
QESCO is responsible to provide electricity to the 689654 nos of active customers. The customer mix comprises of approximately 73.95% domestic customer including residential customer in both urban & rural areas, 19.39% commercial customer including business customer such as markets, plazas, and offices in both urban & rural areas, 0.54% industrial customer consisting of large & small industrial loads, 0.34% Federal Government connections, 1.46% Provincial Government connections, 0.05% general services/ bulk customer consisting primarily of large societal customer like housing societies, 4.27% agricultural customer including tube well in rural areas.

As on till date the Company's Transmission & Grid system comprises of 75 no of 132kV & 03 no of 66kV grid stations and 149 no of Power Transformers by a network around 6465km of transmission lines.



PROSPECTUS

Over the years to cater the growth in power demand, the Company took several initiatives such as Capacity additions, loss reduction initiatives and process improvements have enabled QESCO to provide energy to the customer in the service territory.



Sale Pattern

Circle wise overall Sale & Billing Pattern is as under:-

Circles	Consumption		Revenue Billed (Rs. In Million)	
	2018-19	2019-20	2018-19	2019-20
CENTRAL	1064.4	1090.50	17612.6	18650.70
LORALAI	661.6	646.60	10309.8	6512.90
KHUZDAR	1492.2	1524.80	23020.1	16088.80
SIBI	516.2	487.90	8749.1	7918.20
PISHIN	795.1	843.50	12193.5	7668.60
MEKRAN	249.3	248.80	4532.7	4805.20
QESCO	4,916.0	4842.0	71,478.50	61644.50

Consumption Pattern

Consumption pattern for the year 2019- 20 is as under: -

Category	Consumption 2019-20	% age of Consumption 2019-20
Domestic	517.78	14.32
Commercial	118.18	3.27
Industrial	154.76	4.28
Agri	3247.44	89.84
Federal govt.	128.86	3.56
Provincial Govt.	250.27	6.92

PROSPECTUS

BILLING AND RECOVERY

In line with the directions to the Authority directives the special emphasis of the company was given to monitor and control the meter reading by employing meter reading with snaps. The company has achieved 100 % mobile meter reading of domestic, commercial and industrial consumers. The company is committed for provision of timely and error free bills at the doorsteps of their valued consumers. Besides all out efforts and measures are being undertaken to ensure expeditious action against electricity theft.

The recovery was increased from 24.40% to 49.2% for the year 2020-21. Company is committed to ensure that complaints against any billing related issues are timely addressed and feedback thereof is transmitted to the consumer.

Poor Consumer Discipline/ Bottle Neck:

The main financial crunch faced by QESCO is due to the reluctant attitude/ nonpayment culture of Agricultural consumers despite of the Agri subsidy agreement. Wherein, it is pertinent to mention here that, only 4.33% of Agri customers consume more than 72% of QESCO's total demand & subsequently approximately 88% of QESCO's revenue relies over the recovery from Agri customers.

Ground Reality:

It is to mention here that Agri consumers have not come up to their commitment. Almost 98% T/Well running at site have motors of higher capacity ranging from 40 to 60HP which is being duly verified jointly by a special committee constituted by Federal Government and comprising on the relevant stakeholders i.e. Deputy Commissioner, Representative of Zamindar Action Committee & Concern XEN (operation) of QESCO. As said above that Agri consumers violated the decision regarding size of motors and have installed motors of higher capacities i.e. 40 to 60HP instead of 30HP, left no option for QESCO except to curtail/ reduce electricity hours.

The perpetuity of hidden load growth by the consumers Agri compelling the Company to go for repeated progression in rehabilitation/ up-gradation of the distribution system. At present the electrical appliances/ poor quality material are readily available in local market being purchased by the agri consumers & utilize without enhancing their sanctioned load (estimation/ load forecasting) resulting in overburdening the system.

PROSPECTUS

Progressive Billing / Payments

Category	Assessment/Payment	Payment	%age Recovery
Domestic	6,645.16	4,453.60	67.02%
Commercial	3,684.47	3,515.93	95.42%
Industrial	4,788.37	4,760.07	99.40%
Agriculture	35,964.80	12,274.50	34.12%
Govt Departments	10,561.70	5,355.40	50.70%
Total	61,644.5	30,359.5	49.25%

132/66kV Transmission Network:

Chief Engineer (T&G) O&M is the functional head of 132/66kV Transmission Network system and for effective and batter operations & maintenance there are 05 SS&TL divisions which reports to Superintending Engineer GSO Circle QESCO. The Division wise detail of T/Lines are as follows:

S.No	Division	Nos	Type of Circuit	Length of T/Line
1	SS&T Quetta	2 Nos	132 KV D/C	45.85 Km
		22 Nos	132 KV S/C	683.05Km
		2 Nos	66 KV S/C	84.13km
2	SS&T Loralai	18 Nos	132 KV D/C	1160 Km
		9 Nos	132 KV S/C	400 Km
3	SS&T Sariab	5 Nos	132 KV D/C	402 Km
		22 Nos	132 KV S/C	1300.46 Km
4	SS&T Sibi	6 No's	132 KV D/C	736
		8 No's	132 KV S/C	397
		2 No's	66 KV S/C	123
5	SS&T Turbat	02 Nos	132 KV D/S	165.3 Km
		12 Nos	132 KV S/C	968 Km
Grand Total GSO Circle				6464.79 km

Distribution & Supply of Power:

Previously QESCO performs both the functions i.e. Distribution and Supply of power to the customers under one DISTRIBUTION License but now under present CTBCM regime the QESCO is Deemed separate Licensee for Distribution system to carry out maintain and Operate wire business.

Subsequently Quetta Electric Supply Company (QESCO) is Deemed Licensee for Supply of Electric Power as per proviso to Sub-section (1) of Section 23E of

PROSPECTUS

Regulation of Generation, Transmission & Distribution of Electric Power Act, 1997, amended up to date for period of five years which will be expired on 30th April 2023.

Clause (1) of Section 23E of the Act " No person shall, unless licensed by the Authority under this Act, engage in the supply of electric power to the consumer" & in line with the regulation 3(2)(b) NEPRA Licensing (Electric Power Supplier) Regulations, 2022 notified as per SRO # 466(1)/2022, 28th March 2022, a deemed licensee has to make an application to the Authority / NEPRA at least 90 days before the expiry of the period.

QESCO is seeking to apply as Supplier of Last Resort Licence for a term of twenty (20) years in line with the regulation 6(2) NEPRA Licensing (Electric Power Supplier) Regulations, 2022 notified as per SRO # 466(1)/2022, 28th March 2022.

ISOLATED MEKRAN REGION:

At present Isolated MEKRAN region is getting supply from Iran approx. 130-140MW per hour per day (on average) against contracted capacity from 132kV network Jackigor-Mand (100MW), Polan-Jewani (100MW), 20kV MriJawa -Taftan (2MW) & Jalag – Mashkil (2MW).

A project named as Interlinking of Isolated Mekran / Gwadar Region with National Grid Network along with evacuation of Power from newly proposed 300MW Coal Power Project at Gwadar has been started and expected to be completed by the year 2023 & 2025 respectively.

Revenue & Cost Drivers:

The Company, being a regulated entity, is governed through Multi Year Tariff (MYT) regime. Accordingly, National Electric Power Regulatory Authority (NEPRA) determines the tariff for the Company for the tariff control period from time to time. Further, QESCO's MYT includes a tariff variation mechanism based on which fuel, power purchase and other components are to be adjusted in tariff through the monthly and quarterly adjustment mechanism defined in the MYT. These claims were filed in accordance with the mechanism prescribed within the MYT and the Company remains in continuous engagement with NEPRA for expedient processing of these claims. The Company filed its petition for adjustments in the tariff to account for (i) impact of exchange rate variation on allowed Return on Equity (RoE) component, (ii) impact of rupee depreciation on investments and necessary revisions in investment plan due to changes in operational dynamics, service requirements and revision in estimated scope, (iii) impact of working capital requirements of the Company beyond its control,

PROSPECTUS

and (iv) other factors including change in KIBOR & LIBOR rates and sent-out growth from NEPRA assumed levels etc.

Prospects & Demand Outlook:

QESCO is a dynamic organization & demonstrated its resilience and strives hard to grow and thrive, overcoming multiple challenges in its journey so far & in compliance to the NEPRA Act / Licensing Regulations & to steam line investments and to avoid over procurement the MIRAD (Market Implementation & Regulatory Affairs Department) Power Acquisition Plan has been prepared and sent to Authority for approval.

This document is based on Medium Term Load Forecasts (MTLFs) of QESCO as already submitted to the Authority, the IGCEP-2022 as approved by the Authority and the Report on Compliance with Capacity Obligations 2022-23 ("Capacity Obligation Report 2022-23") prepared by the CPPA-G (as designate Market Operator) under the provisions of the approved Market Commercial Code (MCC).

Sr. #	Description	Year:	Current	Year-1	Year-2	Year-3	Year-4
		FY:	2022-23	2023-24	2024-25	2025-26	2026-27
1	Estimated Peak Demand	MW	1,129	1,166	1,206	1,247	1,299
2	Transmission Losses	%age	2.639%	2.639%	2.639%	2.639%	2.639%
3	Adjusted Peak Demand	MW	1,159	1,198	1,238	1,281	1,334
4	Reserve Margin	%age	10.00%	10.00%	10.00%	10.00%	10.00%
5	Capacity Obligation	MW	1,275	1,318	1,362	1,409	1,467
Capacity Obligations							
Sr. #	Description	Year:	Current	Year-1	Year-2	Year-3	Year-4
		FY:	2022-23	2023-24	2024-25	2025-26	2026-27
1	Existing Firm Capacities	MW	29,840	29,840	29,840	29,840	29,840
2	Contracted Firm Capacities	MW	3,743	3,183	6,128	6,939	9,114
3	Retirement Firm Capacities	MW	-1,459	-2,556	-2,566	-2,579	-2,598
4	Total Firm Capacity (1+2+3)	MW	32,124	30,466	33,402	34,200	36,356
5	QESCO Share (as per Code)	%age	5.62%	5.62%	5.62%	5.62%	5.62%
6	QESCO Share Firm Capacity	MW	1,805	1,712	1,877	1,922	2,043
Capacity Obligations							
7	Capacity Obligation	MW	1,275	1,318	1,362	1,409	1,467

PROSPECTUS

FINANCIALS PROFIT AND LOSS ACCOUNT

Rs. In Million

	2015 - 16	2016 - 17	2017 - 18	2018 - 19	2019 - 20
Sales of Electricity - Net	32,275.423	33,983.387	39,864.438	40,878.827	54,077.514
Subsidy from GoP	31,399.552	32,496.270	30,031.986	27,327.540	32,344.151
Total Revenue	63,674.975	66,479.657	69,896.424	68,206.367	86,421.665
Cost of Electricity	(44,008.094)	(51,942.520)	(66,284.560)	(75,335.642)	(88,987.019)
Gross Profit / (Loss)	19,666.881	14,537.137	3,611.864	(7,129.275)	(2,565.355)
Amortization of Deferred Credit	369.687	411.543	473.490	552.661	588.244
	20,036.568	14,948.680	4,085.354	(6,576.614)	(1,977.111)
O&M Cost & Provision	(51,317.695)	(31,752.598)	(30,875.383)	(30,604.041)	(104,952.870)
Depreciation	(1,979.014)	(2,054.083)	(2,142.093)	(1,580.563)	(1,626.0131)
	(53,296.709)	(33,806.681)	(33,017.476)	(32,184.604)	(106,578.883)
Operating Profit / (Loss)	(33,260.141)	(18,858.001)	(28,932.122)	(38,761.218)	(108,555.994)
Other Income	2,118.302	3,225.474	3,620.914	4,122.823	4,704.526
Financial Charges	(1,391.404)	(1,755.092)	(883.217)	(3,567.411)	(3,520.285)
Profit / (Loss) before Taxes	(32,533.243)	(17,387.619)	(26,194.425)	(38,205.806)	(107,371.753)
Taxes	519.287	547.310	1,029.917	1,055.540	1,029.569
Profit / (Loss) after Taxes	(33,052.530)	(17,934.929)	(27,224.342)	(39,261.346)	(108,401.323)

BALANCE SHEET (SHARE CAPITAL & LIABILITIES)

Rs. In Million

	2015 - 16	2016 - 17	2017 - 18	2018 - 19	2019 - 20
Share Capital	0.010	0.010	0.010	0.010	0.010
Accumulated Profit / (Loss)	(117,341.630)	(138,525.080)	(201,815.814)	(242,607.967)	(350,619.048)
Deposit for Share	57,245.210	57,245.210	56,905.657	58,597.521	58,597.520
Surplus on revaluation	33,174.940	32,101.790	30,750.846	30,631.304	30,215.784
Total Equity	(26,921.470)	(49,178.070)	(114,159.301)	(153,379.132)	(261,805.734)
Deferred Credit	8,576.820	9,436.250	11,739.728	12,268.881	11,979.375
Long Term Loans	32,668.000	46,273.340	47,009.207	12,172.920	12,211.382
Employees, retirement benefits	11,007.920	15,993.720	19,121.885	20,831.980	22,556.153
Security Deposit	790.270	861.130	929.841	1,025.816	1,131.625
Receipts against deposit works	9,901.020	11,150.350	9,674.940	9,162.592	12,001.110
Total Long Term Liabilities	62,944.030	83,714.790	88,475.600	55,462.189	59,879.645
Trade and other Payables	2,802.440	2,763.620	2,390.227	2,774.401	2,361.610
Due to Associated undertakings	134,603.750	147,450.760	197,665.004	303,475.580	382,994.403
Interest Accrued	4,258.330	6,012.320	8,204.948	10,545.001	13,269.395
Current portion of Long Term Loan	1,533.780	2,544.980	3,558.179	4,355.023	5,233.743
Provision for Taxation	523.900	1,071.200	1,172.081	1,684.051	2,713.621
Total Current Liabilities	143,722.200	159,842.880	212,990.440	322,834.056	406,572.772
Total Liabilities	179,744.760	194,379.600	187,306.739	224,917.113	204,646.683

PROSPECTUS

ASSETS

Rs. In Million

Balance Sheet	2014 - 15	2015 - 16	2016- 17	2017- 18	2018 - 19
Operating Fixed Assets	58,093.390	57,847.210	61,463.980	61,074.644	60,250.651
Capital Work in Progress	17,382.880	21,838.710	22,147.120	25,120.160	27,722.710
Long Term Advances	53.130	63.410	36.610	19.015	7.922
Long Term Deposit	1.240	1.990	1.990	2.044	2.066
Total Fixed Assets	75,530.640	79,751.330	83,649.700	86,215.863	87,983.349
Store and Spares	3,251.430	3,301.340	3,557.610	3,834.912	3,579.267
Trade Debts	52,276.330	59,763.510	85,702.080	82,435.099	64,327.772
Loans and Advances	518.190	314.380	348.050	1,286.419	843.910
Due from Associated Undertakings	18,612.120	19,631.690	9,197.430	14,788.394	15,832.851
Other Receivable	24,281.510	25,232.700	28,685.850	32,691.398	25,597.366
Cash and bank balances	5,274.530	6,384.640	4,363.080	3,665.020	6,482.217
Total Current Assets	104,214.110	114,628.270	131,854.110	138,701.242	116,663.383
Total Assets	179,744.750	194,379.590	215,503.810	24,917.105	204,646.732

FINANCIAL RATIOS

	2015 - 16	2016-17	2017-18	2018 - 19	2019 - 20
G.P. Ratio	30.89	21.87	5.17	-10.45	-2.97
Net Profit Ratio	-51.91	-26.98	-38.95	-57.56	-125.43
Current Ratio	0.73:1	0.72:1	0.64:1	0.43:1	0.29:1
Debtors Turnover (Times)	0.44	0.38	0.31	0.29	0.29
Collection Period (days)	834.17	964.68	1164.12	1,277	1,245
Payable Turnover (Times)	0.33	0.36	0.36	0.25	0.24
Payment Period (days)	1,113.70	1,011.22	1,027.51	1,456	1,552

PROSPECTUS

CORPORATE INFORMATION

Registered Head Office:

QESCO Head Quarter
Zarghoon Road, Quetta Cantt.
Phone No +92 819202211
Email: ceoqesco@yahoo.com

Fax No: +92 819202938
www.qesco.com.pk

Chief Executive Officer
Engr. Abdul Kareem Jamali

Finance Director
Mr. Mohsin Eshan Mughal

Company Secretary
Syed Ahmer Ali

Bankers

National Bank of Pakistan
The Bank of Punjab
Askari Commercial Bank Limited

Habib Bank Limited
United Bank Limited
Allied Bank Limited

Bank Alfalah Limited
Muslim Commercial Bank Ltd.

Auditors

M/S Riaz Ahmed & Company

Chartered Accountants

Tax Advisor

M/S KPMG Taseer Hadi & Co.

Chartered Accountants

Legal Advisors/ Advocates

Mr. Hadi Shakil Ahmed
Mr. Ghulam Mustafa Buzdar
Mr. Farooq Anwar
Mr. Fiaz Ahmed Singera
Mr. Saleem Uddin Tareen
Mr. Aziz Ullah Khan Kakar

Mr. Muhammad Munir Paracha
Mr. Abbas Haider Jaffari
Sardar Ahmed Haleemi
Syed Iqbal Shah
Mr. Shah Mir Badshah

Mr. Aurangzeb Mirza
Mirza Luqman Masood
Mr. Anwar Ul Haq Ch.
Mr. Muhammad Afzal Harifal
Mr. Abdul Qadir Khilji

DISTRIBUTION SYSTEM REHABILITATION PROGRAMS

In order to strengthen the supply business, QESCO strived hard to execute projects under ELR / DOP to provide safe, reliable & un-interrupted supply to its customers. Therefore, the network risk assessment performed with various models normally dictate whether rehabilitation measures are required or else. However, there are programs where rehabilitation work is undertaken without network risk assessment, for example on special instruction of the authority etc. all these cases don't involve satisfactory benefit to cost (B/C) ratios but are still essential in DISCO's liability. Such rehabilitation / expansion work is done under the Distribution of Power (DOP) program. Thus, there are two major scenarios in which rehabilitation is performed.

A. Distribution of Power (DOP)

These programs deal with projects where the distribution of power of continuity of service is the main objective instead of feasibility. Major activities performed under this program are:

- i. Construction of feeder due to addition of a 132kV new transformer, new 132kV Grid Station, conversion of 66kV to 132kV and augmentation of Power Transformer to relieve a nearby overloaded Grid Station.
- ii. Rehabilitation of feeder by replacement of conductor, pole, structure, or the introduction of new ones by mid spanning (to reduce span length).
- iii. Deteriorated conductor (with broken strands) or a conductor with more/ unacceptable number of joints may be replaces on top priority basis.
- iv. Augmentation of Distribution Transformer (with higher capacity) due to the addition of new general connections / increase of load by individual customers.
- v. Replacement of off-size conductor etc. may be carried out under DOP.

B. Energy Loss Reduction (ELR)

The Energy Loss Reduction is an iterative process to reduce the annual energy loss incurred by the distribution company. Major factors affecting energy losses are voltage drop in distribution network are listed below:

- i. Impedance of line conductor
- ii. Loading of line conductor
- iii. Power factor
- iv. Defective / Sluggish meters
- v. Theft of Electricity

Thus, the distribution network must be constantly monitored to reduce these factors and the cost of rehabilitation shout be justified against the benefits. The major activities that are performed under ELR are:

- i. Area planning with or without network augmentation

- ii. Capacitor installation (fixed/ shunt)
- iii. Reconductoring
- iv. Transformer Relocation
- v. Replacement of sluggish equipment
- vi. Feeder Bifurcation
- vii. Transformer augmentation

The abstract of ELR & DOP work for the last three year are as under:

SUMMARY OF APPROVED DOP WORKS UNDER SAP HEAD				
S.No	YEAR		NO OF PROPOSALS	COST (Rs M)
1	2019-20	HT	0	0
		LT	1	0.275
2	2010-21	HT	11	68.719
		LT	12	7.946
3	2021-22	HT	13	78.485
		LT	24	41.382

SUMMARY OF APPROVED ELR2 WORKS UNDER SAP HEAD				
S.No	YEAR		NO OF PROPOSALS	COST (Rs M)
1	2019-20	HT	2	33.68
		LT	8	3.47
2	2010-21	HT	14	162.48
		LT	87	39.3
3	2021-22	HT	28	306.5
		LT	86	44.8

THE COMPANIES ORDINANCE, 1984

Company Limited by Shares

Memorandum

and

Articles of Association

QUETTA ELECTRIC SUPPLY COMPANY LIMITED

GOVERNMENT OF PAKISTAN



CERTIFICATE OF INCORPORATION

(Under section 32 of the Companies Ordinance, 1984 (XLVII of 1984))

Company Registration No. L. 09520 of 1997-98

I hereby certify that "QUETTA ELECTRIC SUPPLY COMPANY LTD."

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is this day incorporated under the Companies Ordinance, 1984 (XLVII of 1984) and that

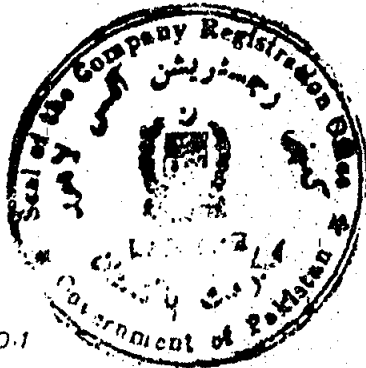
the company is limited by _____ Shares.

Given under my hand at _____ Lahore.

this 13th day of May

one thousand nine hundred and _____ ninety eight.

Fee Rs. -5,000,200/-



CRO-1

REGISTRAR
OF COMPANIES

No. JRL 7993

Dated 14.5.98

GOVERNMENT OF PAKISTAN



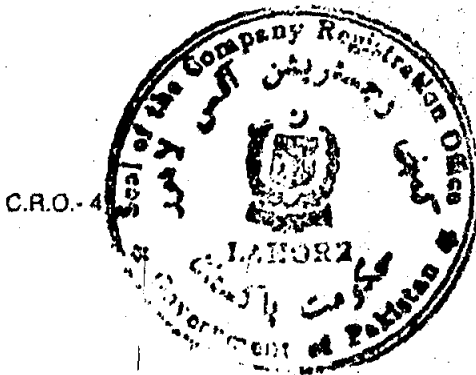
CERTIFICATE FOR COMMENCEMENT OF BUSINESS

(Under section 146 (2) of the Companies Ordinance, 1984 (XLVII of 1984))

I hereby certify that the "QUETTA ELECTRIC SUPPLY COMPANY LTD." which was incorporated under the Companies Ordinance, 1984 (XLVII of 1984), on the 13th day of May 1998 and which has filed a duly verified declaration in the prescribed form that the conditions of clauses (a) to (e) of sub-section (1) of Section 146 of the said Ordinance have been complied with, is entitled to commence business.

Given under my hand at Lahore this 16th day of June one thousand nine hundred and Ninety eight.

Fee Rs. =200/-



(AKBAR SHAH)
Joint Registrar of Companies

No-JRL/8709 dt 16/6/98

QUETTA ELECTRIC SUPPLY COMPANY LIMITED

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QUETTA ELECTRIC SUPPLY COMPANY LIMITED

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THE COMPANIES ORDINANCE, 1984

PUBLIC COMPANY LIMITED BY SHARES

MEMORANDUM OF ASSOCIATION

OF

QUETTA ELECTRIC SUPPLY COMPANY LIMITED

- I. The name of the company is "Quetta Electric Supply Company Limited".
- II. The registered office of the company will be situated in Quetta, Province of Balochistan Pakistan.
- III. The objects for which the Company is established are to undertake any or all of the following businesses:
 1. To acquire or take over those properties, rights and liabilities of the Pakistan Water and Power Development Authority comprising that administrative division formerly known as the Quetta Area Electricity Board (AEB) pursuant to the Pakistan Water and Power Development Authority Act of 1958 (as amended) and to carry on, expand and extend the businesses and activities of such Board or any part thereof including, without limitation, the business of a public electricity distributor and supplier.
 2. To acquire or take over the properties, rights and liabilities of the grid stations of the Pakistan Water and Power Development Authority and the transmission lines in relation thereto which at the date of adoption of this Memorandum and Articles of Association are directly and exclusively supplying electricity to the areas formerly supplied by the Quetta AEB and are located within the said AEB.
 3. To carry on all or any of the businesses of purchasing, importing, transforming, converting, distributing, supplying, exporting and dealing in electricity and all other forms of energy and products or services associated therewith and of promoting the conservation and efficient use of electricity and all other forms of energy, and all other powers necessary or incidental to the business of electricity distribution and supply.
 4. Electrification. - To do anything which a public electricity supplier is empowered or required to do under or by virtue of or under a license or other authorization granted according to law and its implementing rules and regulations or any statutory instrument made thereunder or any statutory modification or re-enactment thereof and to plan, survey, design, supply equipment, and carry out the electrification of cities, towns, villages, gas and oil refineries, workshops, buildings, highways, bridges, ports, air terminals, and other premises within its area of supply.
 5. Dealer in Electrical Equipments. - To carry on all or any of the businesses of wholesalers, retailers, traders, importers, exporters, suppliers, distributors, designers, developers, manufacturers, installers, fitters, testers, repairers, maintainers, contractors, constructors, operators, users, inspectors, reconditioners, servicers, improvers, alterers, protectors, removers, hirers, replacers, importers and exporters of, and dealers in, electrical appliances, systems products and services used for energy conservation,

agricultural, industrial, household and general equipment, furniture, fixtures, fittings and devices, and all other kinds of goods, equipment, machinery, materials and installations, including but not limited to cables, wires, meters, pylons, tracks, rails, pipelines and any other plant, apparatus, equipment, systems and things incidental to the efficient transformation, supply, and distribution of electricity.

6. Determination of Retail Tariff Rates. - To ascertain the retail tariff rates that will secure recovery of operating costs, interest charges and depreciation of assets, redemption at due time of loans other than those covered by depreciation, payment of taxes, and a reasonable return on investment, and to petition the appropriate government body for the adoption of or increase in its schedule of retail tariff rates.
7. Facilities and Installations. - To locate, establish, construct, equip, operate, use, manage and maintain power grid stations, transforming, switching, conversion, and distribution facilities, grid stations, cables, overhead lines, substations, switching stations, tunnels, cable bridges, link boxes, telecommunications stations, masts, aerials and dishes, fiber optic circuits, satellites and satellite microwave connections, heat pumps, plant and equipment for combined heat and power schemes, offices, computer centers, shops, dispensing machines for pre-payment cards and other devices, showrooms, depots, factories, workshops, plants, printing facilities, warehouses and other storage facilities (including but not limited to facilities for storage and disposal of products and waste), training, education and display centers, stands and show-houses, testing premises, laboratories, research stations, compressor stations, vehicle parks, terminals, transport facilities, roads, and other electrical installations and infrastructure it may deem beneficial.
8. Acquisition and Conveyance of Assets. - To acquire or convey, whether by purchase, lease, concession, grant, hire or otherwise, establish, develop, exploit, operate and maintain real or personal properties including but not limited to land, any estates in land, claims, licenses, concessions, easements, exploration and production rights, and rights or interests of all descriptions in or relating to the same, which may seem to the Company capable or possibly capable of affording or facilitating the purchase, transformation, conversion, supply, distribution, and development of electricity or any other form of energy, and for the accomplishment of all the purposes of the Company herein stated.
9. Site Development. - To build, construct, maintain, alter, enlarge, pull down, and remove or replace structures, factories, offices, works, wharves, roads, railways, tramways, machinery, engines, walls, fences, banks, dams, sluices or water courses and to clear sites for the same and to work, manage and control the same and to carry on any other business which may seem to the Company capable of being conveniently carried on in connection with the above or calculated directly or indirectly to enhance the value of or render more profitable the Company's properties, but not to engage in the business of a real estate developer.
10. Intellectual Property Rights. - To apply for and take out, purchase or otherwise acquire any patents, patent rights, inventions, secret processes, designs, copyrights, trademarks, service marks, commercial names and designations, technological know-how, formulae, licenses, concessions and the like (and any interest in any of them), and exclusive or non-exclusive or limited rights to use any secret or other information as to any invention or secret process of any kind, and to use, exercise, develop, and grant licenses

in respect of, and otherwise turn to account and deal with, the property, rights and information so acquired.

11. Metering. - For the purposes of electricity supply, distribution and communication, to install in, on, above or under any premises or place and to operate, use, inspect, maintain, repair, replace and remove cables, lines, ducts, transformers, switchgear (remotely controlled and otherwise, and including time switches), fuses, circuit breakers, electricity service equipment, meters and other devices for measuring or controlling the quantity or quality of electricity supplied, prepayment and debt payment devices, items provided to afford access to, support, encase, insulate, and protect from damage or tampering, the above-mentioned gadgets, or to protect people and property from injury or damage, or to comply with any legal obligation and for other purposes associated with the supply of electricity and to install all such things and apparatus and items for the purposes of supplying, measuring and controlling light, heat, steam, hot water, air-conditioning and refrigeration, and for associated purposes, including payment for these facilities.
12. Demand Forecasting. - To provide or procure the provision of such facilities and services as may be necessary or desirable to forecast electricity/energy demand and to satisfy such demand.
13. Transportation. - To acquire, (whether by purchase, lease, concession, grant, hire or otherwise), charter, lease, take or let on hire, operate, use, employ or turn to account, build, equip, service, repair, maintain, and supply motor vehicles, railway locomotives, wagons, trucks, vessels, and craft of any description, engineering plants and machinery, and parts and accessories of all kinds, and to carry on the businesses of storage contractors, freight contractors, carriers by land, water and air of freight and passengers, forwarding agents, shipping agents and agents of any other kind, in so far as such activities are incidental to or necessary for the transformation, supply and distribution of electricity.
14. Audio-Visual System. - To carry on as principal, agent, contractor or sub-contractor all or any of the businesses of running, operating, managing, supplying and dealing in systems for the conveyance by any means of sounds, visual images, signals, and services, facilities and equipment ancillary to or for use in connection with such systems.
15. Management Information System. - To carry on all or any of the businesses of running, operating, managing, supplying and dealing in data processing and information retrieval systems, computers, computer programmes and software, computer bureau and data bases, meter reading and credit checking and to provide services, facilities and equipment ancillary to or for use in connection with the same.
16. Research and Development. - To carry on business as inventors, researchers and developers, to conduct, promote and commission research and development in connection with the businesses and activities of the Company and its subsidiaries, to establish and maintain research stations, laboratories, workshops, testing and proving grounds and sites, facilities and establishments and installations, and to exploit and turn to account the results of any research and development carried out by or for it.
17. Labour Contracting. - To carry on all or any of the businesses of consultants, advisers and suppliers of management, personnel and training services, whether generally or in respect of one or more of the types of business or activity which the Company has

power to carry on, and to provide training and educational courses, instruction and materials, of every description for workers of the Company and for other persons.

18. **Contracts.** - To enter into agreement with any individual, firm, cooperative or other society, company, corporate body, Government or local authority or other legal entity necessary or expedient for the purpose of carrying on any business of the Company.
19. **Engineering Services.** - To carry on all or any of the businesses of and provide services associated with, engineers (including without limitation electrical, mechanical, heating, ventilation, civil, chemical, sanitation, telecommunications and gas engineers), mechanics, technicians, draftsmen, designers, surveyors, architects, builders, decorators, caterers, kitchen installers, and shopfitters.
20. **Advertisement.** - To adopt such means of making known the products of the Company as may seem expedient and, in particular, by advertising in the press, by circulars, by purchase and exhibition of works of art or interests, by publication of books and periodicals, and by granting prizes, rewards and donations.
21. **Other Businesses.** - To carry on all or any of the businesses of manufacturers, wholesalers, retailers, and traders, whether generally or in relation to particular goods or commodities, and to carry on all or any of the businesses of factors, debt collectors, and developers of and dealers in property, so far as incidental to or necessary for the transformation, distribution and supply of electricity.
22. **Borrowing.** - To borrow or raise money or secure or discharge any debt or obligation (whether of the Company or any other person) in such manner as the Company thinks fit and in particular (but without prejudice to the generality of the foregoing) by the creation or issue, upon such terms as to priority or otherwise as the Company thinks fit, of securities of any kind or mortgages or discharges founded or based upon all or any part of the undertaking, property, assets and rights (present and future) of the Company, or, without any such security, and advance payments with or without allowance of mark-up thereon.
23. **Bank Accounts.** - To open, operate, transfer, and close banking accounts of the Company with any bank or banks and to draw, make, accept, endorse, discount, execute, and issue promissory notes, bills of exchange, bills of lading, warrants, debentures, and other negotiable/non-negotiable or transferable/non-transferable instruments, but not to act as a finance or banking company.
24. **Guaranty and Suretyship.** - To enter into any guarantee, contract of indemnity or suretyship and, in particular (without prejudice to the generality of the foregoing), to guarantee, support or secure, with or without consideration, whether by personal obligation or by mortgaging or charging all or any part of the undertaking, property and assets (present and future), and unsubscribed capital of the Company or by both such methods or in any other manner, the performance of any contract, obligation or commitment of, and the repayment or payment of the principal amounts of and any premiums, interest, dividends, and other moneys payable on or in respect of any securities or liabilities of, any person, including (without prejudice to the generality of the foregoing) any company which is a subsidiary, an affiliate or a holding company of the Company or otherwise associated with the Company, whether or not any valuable consideration or advantage is received by the Company.

25. Partnership. - To enter into partnership, joint venture or cooperation arrangements with any person or company or other legal entity, local or foreign, carrying on or engaged in any business or transaction which the Company is authorized to carry on or engage in, or otherwise seek assistance from or assist any such person, company or legal entity.
26. Related Businesses. - To acquire by any means the whole or any part of the assets, and to undertake the whole or any part of the liabilities, of any person, natural or juridical, carrying on or proposing to carry on any business which the Company is authorized to carry on or which can be carried on in connection therewith, to acquire an interest in, amalgamate or enter into partnership or into any arrangement for sharing profits, cooperation, or mutual assistance, with any such person, to promote, form and sponsor any company or companies in furtherance of the objects herein stated, and to give or accept, for any of the acts or things aforesaid or property acquired, such consideration as the Company thinks fit, including without limitation, any shares, debentures, or other securities or rights.
27. Equity Investment. - To invest the surplus moneys of the Company not immediately required in any manner to subscribe for, purchase or otherwise acquire, and to hold, and deal with, any shares, debentures, bonds, notes, and other securities, obligations and investments of any nature whatsoever, including any options or rights in respect of them, and otherwise to invest and deal with the money and assets of the Company, but not to act as an investment company.
28. Lending. - To advance money or give credit to such persons or companies and on such terms as may seem expedient and, in particular, to customers and others having dealings with the Company, to guarantee the performance of any contract or obligation and the payment of money by the Company, and to accept securities of any person or any property or interest therein of whatever nature in payment or partial payment for any services rendered or for any sale or supply made to, or debt owing from, any such person, but not to act as a finance or banking company.
29. Trusts. - To vest any real or personal property, rights or interests acquired by or belonging to the Company in any person or company on behalf of or for the benefit of the Company, with or without any declared trust in favour of the Company, and to undertake and execute any trust the undertaking whereof may seem desirable, either gratuitously or otherwise.
30. Portfolio Investments. - Subject to such terms and conditions as may be thought advantageous, to trade its shares and to undertake markup and currency swaps, options (including traded options), swap option contracts, forward exchange contracts, futures contracts or other financial instruments allowed by law, including hedging agreements of any kind, all or any of which may be on a fixed and/or floating rate basis and/or in respect of local or foreign currency or commodities of any kind, but not to engage in the business of a stockbroker.
31. Government Permissions. - To apply for and obtain necessary consents, permissions and licenses from any Government, Provincial, Local, Foreign, Multilateral or other authorities or entities for enabling the Company to carry any of its objects into effect or for extending any of the powers of the Company or for effecting any modification of the constitution of the Company or for any other purpose which may seem expedient, and to enter into arrangements with any Government or authorities, foreign, federal,

provincial, municipal, local or otherwise, public or quasi-public bodies, or with any other persons, in any place where the Company may have interests that may seem conducive to the objects of the Company or any of them and to obtain from any such Government, authorities or persons any rights, privileges and concessions which the Company may think fit to obtain, and to carry out, exercise and comply therewith.

32. Dispute Resolution. - To resolve disputes by negotiation, conciliation, mediation, arbitration, litigation or other means, judicial or extra-judicial, and to enter into compromise agreement with creditors, members and any other persons in respect of any difference or dispute with them and to exercise the power to sue and be sued and to initiate or oppose all actions, steps, proceedings or applications which may seem calculated directly or indirectly to benefit or prejudice, as the case may be, the interests of the Company or of its members.
33. Employees' Funds. - To establish and maintain or procure the establishment and maintenance of any contributory or non-contributory pension or superannuation funds for the benefit of, and give or procure the giving of donations, gratuities, pensions, allowances or emoluments to such persons who are or were at any time in the employ or service of the Company, or of any company which is a holding company or a subsidiary of the Company or is allied to or associated with the Company or with any such subsidiary or affiliate company, or who are or were at any time directors or officers of the Company or of any such other company as aforesaid, and the wives, widows, families and qualified dependents of any such persons, and also to establish, subsidize and subscribe to institutions, associations, clubs or funds calculated to be for the benefit of or to advance the interests and well-being of the Company or of any such other company as aforesaid, and make payments to or towards the insurance of any such person as aforesaid and do any of the matters aforesaid, either alone or in conjunction with any such other company as aforesaid.
34. Remuneration. - To enter into contracts with its salaried employees, including a chief executive who, prior to his appointment as such, was not a director of the Company or of its subsidiary or holding Company, and to provide for such other financial assistance to said employees or workers under personnel rules and regulations that the Company may subsequently adopt.
35. Commissions. - To pay and discharge all or any expenses, costs and disbursements, and to pay commissions and to remunerate any person for services rendered or to be rendered in connection with the formation, registration, promotion and flotation of the Company and any company formed, sponsored, registered, and promoted by the Company or incidental to any negotiations between promoters preliminary to the formation of the Company, and the underwriting, placing or issue at any time of securities of the Company or of any other person plus all costs and expenses incurred in the acquisition of any property or assets, including the accomplishment of all or any formalities which the Company may think necessary or proper in connection with any of the matters aforesaid.
36. Charitable Contributions. - To subscribe or contribute (in cash or in kind) surplus properties to, and to promote or sponsor, any charitable, eleemosynary, scientific, educational, benevolent or useful object of a public character or any object which may in the opinion of the Company be likely, directly or indirectly, to further the interests of the Company, its employees and workers or its members.

37. **Dissolution and Winding Up.** - To cease carrying on or wind up any business or activity of the Company and to cancel any registration of and to wind up or procure the dissolution of the Company in any state or territory.
38. **Equity Conversion.** - To issue, allot and grant options over securities of the Company towards the satisfaction of any liability or obligation undertaken or agreed to be undertaken by or for the benefit of the Company, or in consideration of any obligation or for any other similar purpose.
39. **International Operations.** - To procure the Company to be registered or recognized in any part of the world and to do all or any of the above things in any part of the world, either as principal, agent, trustee, contractor or otherwise, alone or in collaboration with another, and either by or through agents, trustees, sub-contractors, subsidiaries or otherwise.
40. **Disposal of Assets and Declaration of Dividends.** - To dispose by any means of the whole or any part of the assets of the Company or of any interest therein and to distribute in specie or otherwise by way of dividends or bonus or reduction of capital all or any of the property or assets of the Company among its members, and particularly, but without prejudice to the generality of the foregoing, securities of any other company formed to take over the whole or any part of the assets or liabilities of the Company or any proceeds of sale or other disposal of any property or assets of the Company.
41. **Insurance.** - To insure the property, assets, and employees of the Company in any manner deemed fit by the Company, and to create any reserve fund, sinking fund, insurance fund or any other special fund whether for depreciation or for repairing, insuring, improving, extending or maintaining any of the properties of the Company or for any other purpose conducive to the interests of the Company, but not to act as an insurance company.
42. **Regulations.** - To make rules or regulations not inconsistent with this Memorandum and to provide for all matters for which provision is necessary or expedient for the purpose of giving effect to the provisions of this Memorandum and the efficient conduct of the affairs of the Company.
43. **General Power.** - To carry on any other businesses or activities which the Directors consider capable of being carried on directly or indirectly for the benefit of the Company and to do all such other things as may be deemed incidental or conducive to the attainment of the above objects or any of them.

Declaration. It is hereby declared that

- (a) the word "company" in this Memorandum of Association, except where used in reference to this Company, shall be deemed to include any partnership or other body of persons, whether corporate or unincorporated, and whether domiciled in Pakistan or elsewhere;
- (b) the objects specified in each of the paragraphs of this clause shall be regarded as independent objects and, accordingly, shall in no way be limited or restricted (except where otherwise expressed in such paragraphs) by reference to or inference from the terms of any other paragraph or the name of the Company, but may be carried out in as full and ample a manner and construed in as wide a

sense as if each of the said paragraphs defined the objects of a separate and distinct company;

- (c) the headings used in each of the paragraphs are for convenience only and are not intended to affect the construction thereof in any way; and,
- (d) notwithstanding anything contained in the foregoing object clauses of this Memorandum of Association, nothing herein shall be construed as empowering the Company to undertake or indulge in the business of banking or financing institution, leasing, investment, or real estate brokerage or insurance, directly or indirectly, as restricted by law or in any unlawful operations.

IV. The liability of the members is limited.

V. The authorized share capital of the Company is Rs. 50,000,000,000 (Rupees Fifty billion) divided into 5,000,000,000 (five billion) ordinary shares of Rs. 10 (Rupees Ten) each with power to increase or reduce the capital and to divide the shares in the capital for the time being into several classes and to attach thereto respectively such rights, privileges or conditions as may be determined by or in accordance with the regulations of the Company, and to vary, modify or abrogate any such rights, privileges or conditions in such manner as may for the time being be provided by the regulations of the Company in accordance with law; provided, however, that rights as between various classes of ordinary shares, if any, as to profits, votes and other benefits shall be strictly proportionate to the paid-up value of shares.

We, the several persons whose names and addresses are subscribed below, are desirous of being formed into a company in pursuance of this Memorandum of Association and we respectively agree to take the number of shares in the capital of the Company set opposite our respective names.

Name and surname (Present and former) in full (in Block Letters)	Father's/ Husband's Name in Full	Nationality	Occupation	Residential Address in Full	Number of Shares taken by Each Subscriber	Signature
1. Mr. Haftez Ullah Qureshi	Nasrullah Qureshi	Pakistani	WAPDA Service	C/o The Chairman AEB, WAPDA Zar Ghoon Road, Quetta	1	
2. Ch. Mushtaq Ahmed	Ch. Jan Muhammad	Pakistani	WAPDA Service	15-E, Model Town, Lahore.	1	
3. Mr. Muhammad Rafique	Abdul Ghani	Pakistani	WAPDA Service	927-Ravi Block, Allama Iqbal Town, Lahore - 54570	1	
4. Mr. Muhammad Amjad	Muhammad Ashraf	Pakistani	WAPDA Service	H. No. 8, Street 61- E, New Shadbagh, Lahore.	1	
5. Mr. Masood Ahmad	Fazal Eiahi	Pakistani	WAPDA Service	72-Ata Turk Block, New Garden Town, Lahore.	1	
6. Mr. Karim Bakash Qureshi	Muhammad Alam Qureshi	Pakistani	WAPDA Service	WAPDA Officers Hostel, Nawan Killi Quetta.	1	
7. Mr. Pir Mian Jan Said	Pir Marifat Shah	Pakistani	WAPDA Service	Muhalla Pir Shah Said, Mashriqi Pira, Mardan (NWFP).	1	

Total number of shares taken 7 (Seven)

Dated the _____ day of _____.

Witnesses to above signatures

(Full Name, Father's/Husband's Name)

(in Block Letters) _____

Signature _____

Occupation _____

Full Address _____

THE COMPANIES ORDINANCE, 1984
PUBLIC COMPANY LIMITED BY SHARES
ARTICLES OF ASSOCIATION
OF
QUETTA ELECTRIC SUPPLY COMPANY LIMITED

1. PRELIMINARY

1. TABLE "A" Not to Apply

The regulations in Table 'A' in the First Schedule to the Companies Ordinance, 1984 shall not apply to the Company except as reproduced herein.

2. Definitions

Unless the context otherwise requires, capitalized terms used in these Articles shall have the meanings set out below:-

- (a) "Articles" mean these Articles as originally framed or as from time to time altered in accordance with law.
- (b) "Board" means the group of Directors in a meeting duly called and constituted or, as the case may be, the Directors assembled at a board.
- (c) "Company" means the Quetta Electric Supply Company Limited.
- (d) "Directors" means the Directors for the time being of the Company as named in Article 49 and, subsequently, such members duly elected and registered pursuant to Sections 178 and 205, respectively.
- (e) "Month" means calendar month according to the Gregorian calendar.
- (f) "Office" means the registered office for the time being of the Company.
- (g) "Ordinance" means the Companies Ordinance, 1984, or any modification or re-enactment thereof for the time being in force.
- (h) "Ordinary Resolution" means a resolution passed at a general meeting of the Company when the votes cast (whether *viva voce*, by show of hands or by poll) in favour of a resolution by members who, being entitled to vote in person or by proxy, do so vote, exceed the number of votes, if any, cast against the resolution by members so entitled and voting.
- (i) "Register" means, unless the context otherwise requires, the register of members to be kept pursuant to Section 147 of the Ordinance.
- (j) "Seal" means the common or official seal of the Company.

- (k) "Section" means a Section of the Ordinance.
- (l) "Special Resolution" means the special resolution of the Company as defined in Section 2(1)(36) of the Ordinance.

3. Interpretation

In these Articles, unless the context otherwise requires:-

- (a) provisions bearing on transfer or transmission of shares, meetings, voting in person or by proxy, management, and the appointment, powers and removal of Directors and employees of the Company shall be read subject to the provisions of Section 183 relating to the power of control by a holding company over its subsidiary; the headings are for convenience only and do not constitute part of these Articles and shall not be used in construing these Articles;
- (b) the singular includes the plural and vice versa and words denoting any gender shall include all genders;
- (c) references to any Act, Ordinance, legislation, Rules or Regulations or any provision of the same shall be a reference to that Act, Ordinance, legislation, Rules or Regulations or provision, as amended, re-promulgated or superseded from time to time;
- (d) the terms "include" or "including" shall mean include or including without limitation;
- (e) expressions referring to writing shall, unless the contrary intention appears, be construed as including references to printing, lithography, photography, and other modes of representing or reproducing words in a visible form;
- (f) words importing persons shall include bodies corporate; and
- (g) words and expressions contained in these Articles shall bear the same meaning as in the Ordinance.

II. BUSINESS

4. Public Company

The Directors shall have regard to the restrictions on the commencement of business imposed by Section 146 if, and so far as, those restrictions are binding upon the Company:

III. SHARES

A. General

5. Shares Under Directors' Control

Subject to Section 183 and these Articles, the shares of the Company shall be under the control of the Directors who may allot or otherwise dispose of the same to such persons, on such terms and conditions as the Directors think prudent.

6. Amount Payable on Application

No shares shall be offered to the public for subscription except upon the term that the amount payable on application shall not be less than the full amount of the nominal amount of the share.

7. Allotment of Shares

No share shall be issued at a discount except in accordance with the provisions of the Ordinance. The Directors shall, as regards any allotment of shares, duly comply with such of the provisions of Sections 68 to 73, as may be applicable to the Company. The minimum subscription upon which the Company may proceed to allot the shares shall be Rs 10,000 (Rupees Ten Thousand).

8. Share Certificates

Every person whose name is entered as a member in the Register shall, free of charge, be entitled to receive within ninety (90) days after allotment or within forty-five (45) days of the application for registration of transfer, a certificate under Seal specifying the share or shares held by him and the amount paid-up thereon, including in particular and without limitation, such legends as the Company shall be obliged to affix to certain classes of share certificates as provided by law or as the Company shall have agreed to affix pursuant to any contractual arrangement in this respect; Provided, that, in respect of share or shares held jointly by several persons, the Company shall not be bound to issue more than one certificate, and delivery of a certificate for a share to one of several joint holders shall be sufficient delivery to all.

9. Certificate under Seal

The certificate of title to shares may be issued under the authority of a Director or of a committee of Directors duly authorized thereto by the Board in such manner and form as the Directors may from time to time prescribe. The Seal shall be duly affixed to every share certificate issued by the Company.

10. Issuance of Replacement Certificate

If a share certificate is defaced, lost or destroyed, it may be renewed on payment by the requesting shareholder or his representative of such fee and stamp taxes, if any, and compliance with such terms prescribed by the Directors as to evidence and indemnity and payment of expenses incurred by the Company in investigating title.

11. Joint Holders

The Company shall not be bound to register more than four persons as joint holders of any share.

12. Trusts Not Recognized

Except as required by law, no person shall be recognized by the Company as holding any share/s upon any trust, and the Company shall not be bound by or be compelled in any way to recognize (even when having notice thereof) any equitable, contingent, future or partial interest in any share or any interest in any fractional part of a share or (except only as by these Articles or by law otherwise provided) any other rights in respect of any share except an absolute right to the entirety thereof in the registered holder.

13. Payment of Commission

The Company may at any time pay a commission to any person for subscribing or agreeing to subscribe (whether absolutely or conditionally) for any shares, debentures or debenture stock in the Company or procuring or agreeing to procure subscriptions (whether absolutely or conditionally) for any shares, debentures or debenture stock in the Company; Provided, that, if the commission in respect of shares shall be paid or payable out of capital, the statutory requirements and conditions shall be observed and complied with, and the amount or rate of commission shall not exceed such percentage on the shares, debentures or debenture stock in each case subscribed or to be subscribed, as may be determined by the Board subject to any limits required by law. The commission may be paid or satisfied, either wholly or partly, in cash or in shares, debentures or debenture stock. The Company may also on any issue of shares pay such brokerage fees as may be lawful; Provided that such brokerage fees shall not exceed such percentage of the shares, debentures or debenture stock paid-up as may be determined by the Board, subject to any limits required by law.

14. Bar on Use of Company Funds

Except to the extent and in the manner allowed by Section 95, no part of the funds of the Company shall be employed in the purchase of, or in loans upon the security of, the Company's shares.

B. TRANSFER OF SHARES

15. Transfer

The instrument of transfer of any share in the Company shall be executed both by the transferor and transferee, and the transferor shall be deemed to remain the holder of the share until the name of the transferee is entered in the Register in respect thereof.

16. Form of Transfer

Shares in the Company shall be transferred in the following form, or in any usual or common form which the Directors shall approve:-

QUETTA ELECTRIC SUPPLY COMPANY LIMITED

I/We, _____, of _____, in consideration of the sum of Rupees _____ paid to me by _____, of _____, (hereinafter called the "Transferee/s", for brevity), do hereby transfer to the Transferee/s the Ordinary/Preferred Share(s) numbered _____ to _____, inclusive, standing in my/our name in the books of the Quetta Electric Supply Company Limited, to hold unto the said Transferee, his/her/their executors, administrators and assigns, subject to the several conditions on which I/We held the same at the time of the execution hereof, and I/We, the Transferee/s, do hereby agree to take the said share (s) subject to the conditions aforesaid.

Witness our hands this _____ day of _____.

Transferor

Transferee

Signature

Signature

Signed by the above-named Transferor/s and Transferee/s in the presence of:

Witnesses

Full Name, Father's/
Husband's Name

(1) _____
Signature

Nationality _____

Full Address:

Occupation _____

Full Address of
Transferee: _____

(2) _____
Signature

Full Address:

Occupation _____

17. Non- Refusal of Transfer of Shares

The Directors shall not transfer any fully paid shares unless the transfer deed is defective or invalid. The Director may decline to recognize any instrument of transfer, unless-

- (a) a fee not exceeding two rupees as may be determined by the Directors and the appropriate stamp tax is paid to the Company in respect thereof; and
- (b) the duly stamped instrument of transfer is accompanied by the certificate of the shares to which it relates, and such other evidence as the Directors may reasonably require to show the right of the transferor to make the transfer.

If the Directors refuse to register a transfer of shares, they shall within one Month after the date of which the transfer deed was lodged with the Company send to the transferee and the transferor notice of the refusal indicating the defect, invalidity or any ground for objection to the transferee, who shall, after removal of such defect or invalidity be entitled to re-lodge the transfer deed with the Company.

18. Closure of Register

On giving seven days' prior notice in the manner provided by the Ordinance, the Register may be closed for such period or periods not exceeding forty-five (45) days in any one year as the Directors may from time to time determine; however, the Register shall not be closed for a period longer than thirty (30) days at any given time.

C. TRANSMISSION OF SHARES

19. Transmission

The executors, administrators, heirs or nominees, as the case may be, of a deceased sole holder of a share shall be the only persons recognized by the Company as having any title to the share. In the case of a share registered in the names of two or more holders, the survivor or survivors shall upon proof of his right of succession be the only person or persons recognized by the Company as having any title to the share.

20. Election to Register or Transfer

Any person becoming entitled to a share in consequence of the death or insolvency of a member shall, upon such evidence being produced as may from time to time be required by the Directors, have the right, either to be registered as a member in respect of the share or, instead of being registered himself, to make such transfer of the share as the deceased or insolvent person could have made. The Directors shall, in either case, have the same right to decline or suspend registration as they would have had in the case of a transfer of the share by the deceased or insolvent person before the death or insolvency.

21. Rights of Person Entitled by Transmission

A person becoming entitled to a share by reason of the death or insolvency of the holder shall be entitled to the same dividends and other advantages to which he would have been entitled if he were the registered holder of the share, except that he shall not, before being registered as a member in respect of the share, be entitled in respect of it to exercise any right conferred by membership in relation to meetings of the Company.

D. ALTERATION OF CAPITAL

22. Power to Increase Capital

The Company may, from time to time, by ordinary resolution, increase the share capital by such sum to be divided into shares of such amount as the resolution shall prescribe.

23. Further Issue of Capital

All further issue of shares capital shall be subject to the applicable provisions of Section 86. Thereafter, the Directors may dispose of the same in such manner as they think most beneficial to the Company.

24. Provisions Applicable to New Shares

The new shares capital shall be subject to the same provisions with reference to transfer and transmission as the original share capital.

25. Consolidation and Subdivision

The Company may, by ordinary resolution:-

- (a) consolidate and divide its share capital into shares of larger amount than its existing shares;
- (b) subdivide its existing shares or any of them into shares of smaller amount than that fixed by the Company's Memorandum of Association, subject to the provisos to Section 92, sub-section (1), clause (d); or
- (c) cancel any shares which, at the date of the passing of the resolution, have not been taken or agreed to be taken by any person.

26. Reduction of Share Capital

The Company may, by Special Resolution, reduce its share capital in any manner, with and subject to any incident authorized and consent required by law.

IV. MEETINGS AND PROCEEDINGS

A. GENERAL MEETINGS

27. Statutory Meeting

The statutory general meeting of the Company shall be held within the period required by Section 157.

28. Annual General Meeting

The annual general meeting shall be held in accordance with the provisions of Section 158, within eighteen (18) Months from the date of incorporation of the Company and, thereafter, once at least in every year within a period of six Months following the close of its financial year and not later than fifteen Months after the holding of its last preceding annual general meeting, as may be determined by the Directors.

29. Other Meetings

All general meetings of the Company other than the statutory meeting or an annual general meeting shall be called extraordinary general meetings.

30. Extraordinary Meetings

The Directors may whenever they think necessary, call an extraordinary general meeting. Extraordinary general meetings may also be called on such requisition, or in default, may be called by such requisition, as provided under Section 159. If at any time there are not within Pakistan sufficient Directors capable of acting to form a quorum, any Director of the Company may call an extraordinary general meeting in the same manner as nearly as possible as that in which meetings may be called by the Directors.

B. Notice and Proceedings

31. Notice of Meetings

Twenty-one days' notice at the least (exclusive of the day on which the notice is served or deemed to be served, but inclusive of the day for which notice is given) specifying the place, the date and the hour of meeting and, in case of special business, the general nature of that business, shall be given in the manner provided by the Ordinance for the general meeting to such persons as are, under the Ordinance or the regulations of the Company, entitled to receive such notices from the Company.

32. Special Business

All business shall be deemed special that is transacted in an extraordinary general meeting and those transacted in an annual general meeting, with the exception of declaration of dividends, the consideration of the accounts, balance sheet and the reports of the Directors and auditors, the election of Directors, and the appointment and fixing of the remuneration of auditors.

33. Quorum

No business shall be transacted at any general meeting unless a quorum of members is present at that time when the meeting proceeds to business. Three members present personally who represent not less than twenty-five percent of the total voting power either on their own account or as proxies shall be a quorum.

34. Effect of Quorum Not Being Present

If within half an hour from the time appointed for the meeting a quorum is not present, the meeting, if called upon the requisition of members, shall be dissolved; in any other case, it shall stand adjourned to the same day in the next week at the same time and place, and, 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 three, shall be a quorum.

35. Chairman of Meeting

The Chairman of the Board of Directors, if any, shall preside as chairman at every general meeting of the Company, but if there is no such Chairman, or if at any meeting he is not present within fifteen minutes after the time appointed for the meeting, or is unwilling to act as chairman, any one of the Directors present may be elected to be the chairman, and if none of the Directors is present, or willing to act as chairman, the members present shall choose one of their number to be the chairman.

36. Adjournment

The Chairman may, with the consent of any meeting at which a quorum is present (and shall if so directed by the majority of members present), adjourn the meeting from time to time but no business shall be transacted at any adjourned meeting other than the business left unfinished at the meeting from which the adjournment took place. When a meeting is adjourned for ten days or more, notice of the adjourned meeting shall be given as in the case of an original meeting. 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.

37. Voting

A resolution put to the vote in any general meeting shall be decided on a show of hands unless a poll is (before or on the declaration of the result of the show of hands) demanded. Unless a poll is so demanded, a declaration by the Chairman that a resolution has, on a show of hands, been carried, or carried unanimously, or by a particular majority, or lost, and an entry to that effect in the minutes of the proceedings of the Company shall be conclusive evidence of the fact, without proof of the number or proportion of the votes recorded in favor of, or against, that resolution.

38. Demand for a Poll

A poll may be demanded only in accordance with the provisions of Section 167.

39. Manner of Taking a Poll

If a poll is duly demanded, it shall be taken in accordance with the manner laid down in Section 168 and the result of the poll shall be deemed to be the resolution of the meeting at which the poll was demanded.

40. Time of Taking a Poll

A poll demanded on the election of Chairman or on a question of adjournment shall be taken at once.

41. Casting Vote

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.

C. Votes of Members

42. Right to Vote

Subject to any rights or restrictions for the time being attached to any class or classes of shares, on a show of hands every member present in person shall have one vote except for election of Directors in which case the provisions of Section 178 shall apply. On a poll, every member shall have voting rights as laid down in Section 160.

43. Voting By Joint Holders

In case of joint-holders, the vote of the senior who tenders a vote, whether in person or by proxy, shall be accepted to the exclusion of the votes of the other joint-holders. For this purpose, seniority shall be determined by the order in which the names stand in the Register.

44. Voting; Corporation Representatives

On a poll, votes may be given either personally or by proxy; Provided, that, no body corporate shall vote by proxy as long as a resolution of its directors in accordance with the provisions of Section 162 of the Ordinance is in force.

45. Proxy to be in Writing

The instrument appointing a proxy shall be in writing under the hand of the principal to his attorney duly authorized in writing. A proxy must be a member of the Company.

46. Instrument Appointing Proxy to be Deposited

The instrument appointing a proxy and the power-of-attorney or other authority (if any) under which it is signed, or a notarially certified copy of that power or authority, shall be deposited at the Office of the Company, not less than forty-eight (48) hours before the time for holding the meeting at which the person named in the instrument proposes to vote and in default the instrument of proxy shall not be treated as valid.

47. Form of Proxy

An instrument appointing a proxy may be in the following form, or a form as near thereto as may be:

QUETTA ELECTRIC SUPPLY COMPANY LIMITED

I, _____, of _____, in the District of _____, being a member of Quetta Electric Supply Company Limited, hereby appoint _____ of _____, as my proxy to vote for me and on my behalf at the (annual/extraordinary as the case may be) general meeting of the Company to be held on the _____ day of _____ and at any adjournment thereof.

48. Revocation of Authority

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 revocation of the proxy or of the authority under which the proxy was executed, or the transfer of the share in respect of which the proxy is given; Provided, that, no intimation in writing of such death, insanity, revocation or transfer as aforesaid 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.

MANAGEMENT AND ADMINISTRATION

A. Board of Directors

49. Number of Directors

The number of Directors shall not be less than seven. The first Directors, to hold office until the first annual general meeting, shall be:-

1. Mr. Hafeez Ullah Qureshi
2. Ch. Mushtaq Ahmed
3. Muhammad Ralique
4. Mr. Muhammad Amjad
5. Mr. Masood Ahmad
6. Mr. Karim Bakash Qureshi
7. Mr. Pir Mian Jan Said

50. Qualification of Directors

Save as provided in Section 187, no person shall be appointed as a Director unless he is a member of the Company.

51. Chairman of the Board

The Directors may elect one of their number as the Chairman of the Board and vest in him such powers and functions as they may deem fit in relation to the management and administration of the affairs of the Company subject to their general supervision and control.

52. Chief Executive

The Directors may elect one of their number to be the Chief Executive of the Company in accordance with the provisions of Sections 198 and 199 and vest in him such powers and functions as they deem fit in relation to the management and administration of the affairs of the Company subject to their general supervision and control. The Chief Executive of the Company shall be the *ex-officio* Vice-Chairman of the Board. The

provisions of the Ordinance shall be observed regarding other matters relating to the Chief Executive.

53. Remuneration

Subject to any approval or limits required by law, the terms and conditions and remuneration of:-

- (a) Director for performing extra services, including the holding of the office of Chairman;
- (b) the Chief Executive; and
- (c) any Director for attending the meetings of the Directors or a Committee of Directors shall be determined by the Board of Directors.

54. Alternate Director

A Director may, with the approval of the Board, appoint any person (including another Director) to be his alternate Director and such an alternate Director shall be entitled to notice of meetings of the Directors and to attend and vote thereat accordingly and, generally, to exercise all the rights of such absent Director subject to any limitations in the instrument appointing him. For the purposes of the proceedings at such meetings, the provisions of these Articles shall apply as if any alternate Director (instead of his appointer) were a Director. An alternate Director shall not require any share qualification and he shall *ipso facto* vacate office as and when his appointer (a) vacates office as a Director; (b) removes the appointee from office; or (c) returns to Pakistan; Provided, that, upon each occasion upon which the appointer thereafter leaves Pakistan again, and unless the appointer shall have informed the Company to the contrary, he shall be deemed to have re-appointed the appointee as his alternate Director and no further approval of the Board shall be required unless the appointer desires to approve another person not previously approved by the Board as his alternate. If an alternate Director shall be himself a Director, his voting rights shall be cumulative but he shall not be counted as more than one for quorum purposes. Any appointment or removal under this Article shall be reflected by notice in writing under the hand of the Director making the same.

B. POWERS AND DUTIES OF DIRECTORS

55. General Management Powers

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 or by these regulations, required to be exercised by the Company in general meeting, subject nevertheless to the provisions of the Ordinance or to any of these Articles, and such regulations being not inconsistent with the aforesaid provisions, as may be prescribed by the Company in a general meeting; but no regulation made by the Company in general meeting shall invalidate any prior act of the Directors which would have been valid if that regulation had not been made.

56. Borrowing Powers

The Directors may exercise all the powers of the Company to raise money otherwise than by issue of shares and to mortgage, charge, pledge, hypothecate or otherwise create

an encumbrance on its undertaking or any part thereof and to issue debentures and other securities whether outright or as security for any obligation, liability or debt of the Company or of any third party. In exercising the aforesaid powers of the Company the Directors may, from time to time and on such terms and conditions as they think fit, raise money from banks and financial institutions and from other persons under any permitted system of financing, whether providing for payment of interest or some other form of return, and in particular the Directors may raise money on the basis of mark-up price, musharika, modaraba or any other permitted mode of financing, and without prejudice to the generally of the foregoing the Directors may exercise all or any of the powers of the Company under Section 196(2) of the Ordinance. In particular, the Directors may issue any security as defined in Section 2(1)(34) of the ordinance or may issue any instrument or certificate representing redeemable capital as defined in 2(1)(30A) of the Ordinance or participatory redeemable capital as defined in Section 2(1)(25) of the Ordinance.

57. Duties of Directors

The Directors shall duly comply with the provisions of the Ordinance.

58. Minute Books

The Directors shall cause minutes to be made in books provided for the purpose of:-

- (a) all appointments of officers made by the Directors;
- (b) the names of the Directors present at each meeting of the Directors and of any committee of the Directors; and
- (c) 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 Directors or committee of Directors shall sign his name in a book to be kept for that purpose.

C. DISQUALIFICATION OF DIRECTORS

59. Disqualification of Directors

No person shall become a Director of the Company if he suffers from any of the disabilities or disqualifications mentioned in Section 187 of the Ordinance and, if already a Director, shall cease to hold such office from the date he so becomes disqualified or disabled or:-

- (a) if removed by general or special order of the holding company;
- (b) if removed by a resolution of members as hereinafter provided; or
- (c) if by notice in writing given to the Company he resigns his office;

Provided, however, that no Director shall vacate his office by reason only of his being a member of any company which has entered into contracts with, or done any work for, the Company but such Director shall not vote in respect of any such contract or work, and if he does so vote, his vote shall not be counted.

D. PROCEEDINGS OF DIRECTORS.

60. Meetings of Directors

- (a) The Directors may meet together for the dispatch of business, adjourn and otherwise regulate their meetings, as they deem proper. Questions arising at any meeting shall be decided by a majority of votes. In case of an equality of votes, the Chairman shall have and exercise a second or casting vote. A Director may, and the secretary on the requisition of a Director shall, at any time, summon a meeting of Directors. Seven (7) days' notice at the least, exclusive of the day on which the notice is served or deemed to be served, but inclusive of the day for which notice is given, shall be given for a meeting of Directors; Provided, that, if all the Directors entitled to attend and vote at any such meeting so agree, in writing, a meeting may be held of which less than seven (7) days' notice has been given.
- (b) A meeting of the Directors may consist of a conference between Directors, some or all of whom are in different places; Provided, that, each Director who participates is able to hear each of the other participating Directors addressing the meeting and, if he so wishes, to address each of the other participating Directors simultaneously, whether directly, by conference telephone or by any other form of communications equipment (whether in use when this Article 60(b) is adopted or developed subsequently) or by a combination of methods. A quorum shall be deemed to be present if those conditions are satisfied in respect of the minimum number and designation of Directors required to form a quorum. A meeting held in this way shall be deemed to take place at the place where the largest group of Directors is assembled or, if no such group is readily identifiable, at the place from where the Chairman participates. Any Director may, by prior notice to the Secretary, indicate that he wishes to participate in the meeting in such manner, in which event, the Directors shall procure that an appropriate conference facility is arranged.

61. Chairman of Directors' Meetings

The Chairman of the Board shall preside at all meetings of the Board but, if at any meeting the Chairman is not present within ten minutes after the time appointed for holding the same or is unwilling to act as Chairman, the Directors present may choose one of their number to be chairman of the meeting.

62. Committees

The Directors may delegate any of their powers not required to be exercised in their meeting to committees consisting of such member or members of their body as they think fit. Any committee so formed shall, in the exercise of the powers so delegated, conform to any restrictions that may be imposed on it by the Directors.

63. Chairman of Committee Meetings

A committee may elect a chairman of its meetings but, if no such chairman is elected, or if at any meeting the chairman is not present within ten minutes after the time appointed for holding the same or is unwilling to act as chairman, the members present may choose one of their number to be chairman of the meeting.

64. Proceedings of Committee Meetings

A committee may meet and adjourn as it thinks fit. Questions arising at any meeting shall be determined by a majority of votes of the members present. In case of an equality of votes, the chairman shall have and exercise a second or casting vote.

65. Validity of Directors' Acts

All acts done in any meeting of the Directors or of a committee of Directors shall, notwithstanding that it be afterwards discovered that there was some defect in the appointment of such Directors or that they or any of them were disqualified, be as valid as if every such person had been duly appointed and was qualified to be a Director unless the said act or acts is *ultra vires* in itself.

66. Resolution in Writing

A resolution in writing circulated to all the Directors and signed by a majority of the total number of Directors or affirmed by them through fax, telex or telegram shall be as valid and effectual as if it had been passed at a meeting of the Directors duly convened and held.

E. ELECTION AND REMOVAL OF DIRECTORS

67. Rotation of Directors

At the first annual general meeting of the Company, all the Directors shall retire from office, and Directors shall be elected in their place in accordance with Section 178 for a term of three years.

68. Eligibility for Re-election

A retiring Director shall be eligible for re-election.

69. Election in Accordance with the Ordinance

The Directors shall comply with the provisions of Sections 174 to 178 and Sections 180 and 184 relating to the election of Directors and matters ancillary thereto.

70. Filling of Casual Vacancy

Any casual vacancy occurring in the Board of Directors may be filled by the Directors, but the person so chosen shall be subject to retirement at the same time as if he had become a Director on the day on which the Director in whose place he is chosen was last elected as Director.

71. Removal of Director

The Company may remove a Director but only in accordance with the provisions of the Ordinance.

VI. THE SEAL

72. Common Seal

The Directors shall provide a common seal of the Company which shall not be affixed to any instrument except by the authority of a resolution of the Board or by a committee of Directors authorized in that behalf by the Board. Two (2) Directors or one Director and the secretary of the Company shall sign every instrument to which the common seal is affixed.

73. Official Seal

The Directors may provide for the use in any territory, district or place not situated in Pakistan, of an official seal which shall be a facsimile of the common seal of the Company, with the addition on its face of the name of every territory, district or place where it is to be used. The provisions of Section 213 shall apply to the use of the official seal.

VII. DIVIDENDS AND RESERVES

74. Declaration of Dividends

The Company in general meeting may declare dividends but no dividend shall exceed the amount recommended by the Board.

75. Interim Dividends

The Board may from time to time direct payment to the members or to the holding company such interim dividends as appear to be justified by the distributable profits of the Company.

76. Dividends Payable Out of Profits

No dividends shall be paid otherwise than out of distributable profits of the year or any other undistributed profits. No unpaid dividend shall bear interest against the Company.

77. Dividends Payable on Amount Paid on Shares

All dividends shall be declared and paid according to the amounts paid on the shares.

78. Reserve Fund

The Directors may, before recommending any dividend, set aside out of the profits available for distribution of the Company such sums as they think proper as a reserve or reserves which shall, at the discretion of the Directors, be applicable for meeting contingencies, or for equalizing dividends, or for any other purpose to which the profits of the Company may be properly applied, and pending such application may either be employed in the business of the Company or be invested in such investments (other than shares of the Company) as the Directors may, subject to the provisions of the Ordinance, from time to time think fit.

79. Profit Carried Forward

The Directors may carry forward any profits which they may think prudent not to distribute, without setting them aside as a reserve.

80. Payment of Dividends Specie

With the sanction of a resolution in a general meeting, any dividend may be paid wholly or in part by the distribution of specific assets and in particular of paid-up shares or debentures of any other company or in any one or more of such ways. The Directors may fix the value for distribution of such specific assets or any part thereof and may determine that cash payments shall be made to any members upon the footing of the value so fixed, in order to adjust the rights of all members, and may vest any such specific assets in trust for the members entitled to the dividend as may seem expedient to the Directors.

81. Dividends to Joint Holders

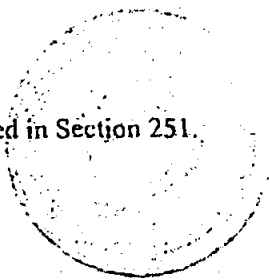
If several persons are registered as joint holders of any share, any one of them may give effectual receipt for any dividend payable on the share.

82. Notice of dividend

Notice of any dividend that may have been declared shall be given in the manner hereinafter mentioned to the persons entitled thereto. The Company may give such notice by publication in a newspaper of general circulation in the Province where the Office is situated.

83. Period for Payment of Dividends

Dividends shall be paid within the period specified in Section 251.



VIII. ACCOUNTS

84. Books of Account

The Directors shall cause to be kept proper books of account as required under Section 230.

85. Place Where Accounts Kept

The books of account shall be kept at the Office or at such other place as the Directors shall think fit and shall be open to inspection by the Directors during business hours.

86. Inspection by Members

The Directors, or their representatives, shall from time to time determine whether and to what extent and at what time and place/s and under what conditions or regulations the accounts and books or papers of the Company or any of them shall be open to the inspection of members not being Directors. No member (not being a Director) shall have any right of inspecting of any account and book or papers of the Company, except

as conferred by law or authorized by the Directors or by the Company in general meeting.

87. Annual Accounts

The Directors shall as required by Sections 233 and 236 cause to be prepared and to be laid before the Company in general meeting such profit and loss accounts and balance sheets duly audited and reports as are referred to in those sections.

88. Balance Sheet and Profit and Loss Account

A balance sheet, profit and loss account, and other reports referred to in the preceding Article shall be made out every year and laid before the Company in the annual general meeting made up to a date not earlier than six months before such meeting. The balance sheet and profit and loss account shall be accompanied by a report of the auditors of the Company and the report of Directors.

89. Copy of Accounts to be Sent to Members

A copy of the balance sheet and profit and loss account and reports of Directors and auditors shall, at least twenty-one days preceding the meeting, be sent to the persons entitled to receive notices of general meetings in the manner in which notices are to be given as hereinafter provided.

90. Compliance with the Ordinance

The Directors shall in all respects comply with the provisions of Sections 230 to 236.

91. Capitalization of Profits

The Company in general meeting may, upon the recommendation of the Directors, resolve that it is desirable to capitalize any part of the amount for the time being standing to the credit of any of the Company's reserve accounts or to the credit of the profit and loss accounts or otherwise available for distribution. The Company may then set free such sum for distribution among the members who would have been entitled thereto if distributed by way of dividend and in the same proportions, on condition that the same be not paid in cash but be applied in or towards paying up in full un-issued shares or debenture of the Company to be allotted and distributed, credited as fully paid up to and amongst such members in the proportion aforesaid. The Board of Directors shall give effect to such distribution by resolution.

92. Audit

Auditors shall be appointed and their duties regulated in accordance with Sections 252 to 255 of the Ordinance.

IX. NOTICES

93. Notice to Members, etc.

Notice shall be given by the Company to members and auditors of the Company and other persons entitled to receive notice in accordance with law.

X. CONFIDENTIALITY

94. Confidentiality Undertaking

Every director, manager, adviser, auditor, trustee, member of a committee, officer, agent, accountant, or other employees of the Company shall, if so required by the Directors, before entering upon his duties, sign a confidentiality undertaking in relation to all transactions of the Company with its customers and the state of accounts with individuals and in matters relating thereto, and shall undertake not to reveal any of the matters which may come to his knowledge in the discharge of his duties, except when required to do so by the Directors or by any general meeting or by any a court of law of competent jurisdiction and except so far as may be necessary in order to comply with any of the provisions in these presents.

95. Members' Access to Company Premises

No member or other person (not being a Director) shall be entitled to enter upon the property of the Company or examine the Company's premises or properties without the permission of a Director, subject to Article 94, to require discovery of or any information respecting any detail of the Company's trading or any matter which is or may be in the nature of a trade secret, mystery of trade, or secret process or of any matter whatsoever which may relate to the conduct of the business of the Company and which in the opinion of the Directors will be inexpedient, in the interest of the Company and its members, to communicate.

XI. RECONSTRUCTION

96. Reconstruction

On any sale of the undertakings of the Company, the Directors or the liquidators on a winding up may, if authorized by a Special Resolution, accept fully paid shares, debentures or securities of any other company, either then existing or to be formed for the purchase in whole or in part of the property of the Company. The Directors (if the profits of the Company permit), or the liquidators (in a winding up), may distribute such shares, or securities, or any other properties of the Company amongst the members without realization, or vest the same in trustees for them. A Special Resolution may provide for the distribution or appropriation of the cash, shares or other securities, benefits or property, and for the valuation of any such securities or property at such price and in such manner as the meeting may approve. All shareholders shall be bound by any valuation or distribution so authorized, and waive all rights in relation thereto save only such statutory rights (if any) as are, in case the Company is proposed to be or is in the course of being wound up, incapable of being varied or excluded by these Articles.

XII. WINDING UP

97. Division and distribution of Assets Upon Dissolution

If the Company is wound up, the liquidator may, with the sanction of a Special Resolution of the Company and any other sanction required by law, divide amongst the members in specie or kind the whole or any part of the assets of the Company (whether

15
they shall consist of property of same kind or not) and may, for such purpose, set such value as he deems fair upon any property to be divided as aforesaid and may determine how such division shall be carried out as between the members or different classes of members. The liquidator may, with like sanction, vest the whole or any part of such assets in trustees upon such trust for the benefit of the contributors, as the liquidator with like sanction, shall think fit; Provided, that, no member shall be compelled to accept any shares or other securities whereon there is any liability.

XIII. INDEMNITY

98. Indemnification

Every officer or agent of the Company may be indemnified out of the assets of the Company for any liability incurred by him in defending any proceedings, whether civil or criminal, arising out of his dealings in relation to the affairs of the Company, except those brought by the Company against him, in which judgement is given in his favour or in which he is acquitted, or in connection with any application under Section 488 in which relief is granted him by a court of competent jurisdiction.

XIV. ARBITRATION

99. Differences to be Referred to Arbitrator

Every intra-corporate dispute shall, as a condition precedent to any other action at law be referred, in conformity with the Arbitration Act, 1940, as amended, and its implementing rules, to the decision of an arbitrator to be appointed by the parties in dispute or, if they cannot agree upon a single arbitrator, to the decision of two arbitrators of whom one shall be appointed by each of the parties in dispute, or, in the event of the two arbitrators not agreeing, then of an umpire to be appointed by the two arbitrators, in writing, before proceeding on the reference. Such decision and arbitral award shall be final and binding on the parties. Intra-corporate disputes shall include any dispute that may arise between the Company on the one hand and any of the members, their executors, administrators or assigns on the other hand, or between members, their executors, administrators or assigns, relating to these Articles or the statutes, or anything then or thereafter done, executed, omitted or suffered in pursuance of these Articles or of the statutes or any breach or alleged breach, or otherwise relating to these Articles or to any statute affecting the Company or to any of the affairs of the Company.

We, the several persons whose names and addresses are subscribed below, are desirous of being formed into a company in pursuance of these Articles of Association and we respectively agree to take the number of shares in the capital of the Company set opposite our respective names.

Name and surname (Present and former) in full (in Block Letters)	Father's/ Husband's Name in Full	Nationality	Occupation	Residential Address in Full	Number of Shares taken by Each Subscriber	Signature
1. Mr. Hafeez Ullah Qureshi	Nasrullah Qureshi	Pakistani	WAPDA Service	C/o The Chairman AEB, WAPDA Zar Ghoon Road, Quetta	1	
2. Ch. Mushraq Ahmed	Ch. Jan Muhammad	Pakistani	WAPDA Service	15-E, Model Town, Lahore.	1	
3. Mr. Muhammad Rafique	Abdul Ghani	Pakistani	WAPDA Service	927-Ravi Block, Allama Iqbal Town, Lahore - 54570	1	
4. Mr. Muhammad Amjad	Muhammad Ashraf	Pakistani	WAPDA Service	H. No. 8, Street 61- E, New Shadbagh, Lahore.	1	
5. Mr. Masood Ahmad	Fazal Elahi	Pakistani	WAPDA Service	72-Ata Turk Block, New Garden Town, Lahore.	1	
6. Mr. Karim Baksh Qureshi	Muhammad Alam Qureshi	Pakistani	WAPDA Service	WAPDA Officers Hostel, Nawan Killi Quetta.	1	
7. Mr. Pir Mian Jan Said	Pir Marifat Shah	Pakistani	WAPDA Service	Muhalla Pir Shah Said, Mashriqi Pira, Mardan (NWFP).	1	

Total number of shares taken

7 (Seven)

Dated the 4 day of May 1998

Witnesses to above signatures

(Full Name, Father's/Husband's Name)

(in Block Letters) MR. M. M. D. Qureshi
M. M. B. A. Qureshi

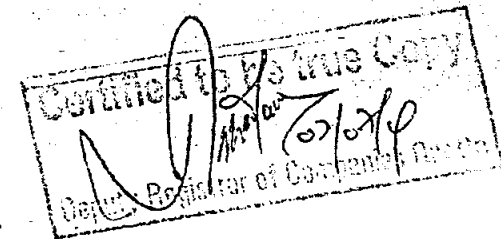
Signature

Occupation

SERVICE

Full Address

8-Block Mansoor
30-Shahrah Quaid-e-Azam
Lahore



2023

COMBINED POWER ACQUISITION PROGRAMME Of XW-DISCOs (Suppliers of Last Resort)

2022-23 to 2026-27



• Islamabad Electric Supply Company (IESCO)



• Peshawar Electric Supply Company (PESCO)



• Faisalabad Electric Supply Company (FESCO)



• Lahore Electric Supply Company (LESCO)



• Gujranwala Electric Power Company (GEPCO)



• Multan Electric Power Company (MEPCO)



• Hyderabad Electric Supply Company (HESCO)



• Quetta Electric Supply Company (QESCO)



• Tribal Areas Electric Supply Company (TESCO)



• Sukkur Electric Power Company (SEPCO)

Pursuant to the Proviso to Regulations 7(3), 6(1), 6(2) including proviso thereof of NEPRA (Electric Power Procurement) Regulations, 2022 read with Regulation 12(1) and 12(3) of NEPRA Licensing (Electric Power Supplier) Regulations, 2022 and Section 32 of Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997.

EXECUTIVE SUMMARY

As per Section-32 of Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (the Act), as amended through Generation, Transmission and Distribution of Electric Power (Amendment) Act, 2018, the Authority was required to specify procedures and standards for the Authority's prior approval of the transmission companies' and distribution companies' investment and power acquisition programmes within eighteen (18) months of the commencement of the Act. The required regulations were promulgated by the Authority as NEPRA (Electric Power Procurement) Regulations, 2022 (Procurement Regulations) notified vide SRO No. 2136(I)/2022 dated December 06, 2022. In line with the amended Act, NEPRA Licensing (Electric Power Supplier) Regulations, 2022 (Licensing Regulations) were also issued by the Authority vide SRO No. 446(I)/2022 dated March 28, 2022.

While the XW-DISCOs, currently carrying out electric power supply business as "deemed licensee" in terms of the amended Act, Regulation 12 of the Licensing Regulations an electric power supplier is required to submit its power acquisition programme (PAP) to the Authority on annual basis. While the competitive supplier does not require approval of the Authority to the submitted PAP, the PAP submitted by the suppliers of the last resort (SOLRs), i.e., the XW-DISCOs, is subjected to the approval of the Authority.

The regulations 6 and 7 of the Procurement Regulations, including the provisos to sub-regulations 6(2) and 7(3), provide high level guidance towards development, submission of and timelines for the "combined power acquisition programme" of all SOLRs. In the absence of clarity on responsibility for combining / compiling and submission of said combined power acquisition programme and the existence of a Independent Auction Administrator for consultation required as per mentioned proviso to sub-regulation 6(2) of the Procurement Regulations; this combined power acquisition programme of the XW-DISCOs, i.e. SOLRs except KE, is developed through a joint collaborative effort of MIRADs of the XW-DISCOs (the SOLRs). The clarifications and disclaimers provided at Section 1.3 of the document form integral part of the combined power acquisition programme.

Besides requirements of the Act, the Licensing Regulations, and the Procurement Regulations, this document is based on Medium Term Load Forecasts (MTLFs) of each SOLR as already submitted with the Authority, the IGCEP-2022 as approved by the Authority and the Report on Compliance with Capacity Obligations 2022-23 ("Capacity Obligation Report 2022-23") prepared by the CPPA-G (as designate Market Operator) under the provisions of the approved Market Commercial Code (MCC).

The above-mentioned Capacity Obligation Report 2022-23 provides systematic calculation of Capacity Obligation of each SOLR determined in accordance with the Market Commercial Code and valuation of existing and future contracted firm capacities of supply for assessment of compliance with the said Capacity Obligation. The document also provides details of contracted capacities and allocation thereof to each SOLR.

The assessment of security of supply reveals that, without prejudice to the individual SOLR level (minor / serious) reported intermittent non-compliances, the SOLRs collectively have adequately sufficient supply for current as well next 4 years. It may be noted that the reported SOLR-wise compliance status for the Year-3 (FY 2025-26) and Year-4 (FY 2026-27) is based on 80% and 60% required compliance, respectively. The results of Capacity Obligation Report 2022-23, prepared by the Market Operator, in terms of the year-wise / SOLR-wise Capacity Obligation (MW), Credited Firm Capacity (MW), %age compliance to the Capacity Obligation and level of compliance, are summarized as below:

Capacity Obligation (MW):

DISCO	Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27
IESCO	2,256	2,834	2,956	3,124	2,628	2,082
PESCO	2,736	2,854	3,019	3,163	2,647	2,050
FESCO	2,969	3,968	4,249	4,456	3,729	2,943
LESCO	5,210	6,302	6,603	6,855	5,720	4,467
GEPCO	2,198	3,106	3,235	3,393	2,840	2,230
MEPCO	3,510	5,432	5,773	6,112	5,160	4,094
HESCO	848	1,333	1,382	1,431	1,186	921
QESCO	835	1,276	1,317	1,363	1,127	881
TESCO	0	590	615	643	539	424
SEPCO	690	1,133	1,150	1,167	947	721
TOTAL	21,252	28,827	30,298	31,707	26,524	20,811

Note: Capacity Obligation(s) for Year-3 and Year-4 are based 80% and 60%, respectively.

Credited Firm Capacity (MW):

DISCO	Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27
IESCO	2,579	3,261	3,092	3,390	3,471	3,690
PESCO	3,718	4,141	3,927	4,305	4,408	4,686
FESCO	3,326	4,205	3,988	4,372	4,477	4,759
LESCO	5,362	6,778	6,428	7,048	7,216	7,671
GEPCO	2,496	3,155	2,992	3,280	3,358	3,570
MEPCO	4,335	5,480	5,198	5,698	5,835	6,202
HESCO	1,217	1,539	1,459	1,600	1,638	1,741
QESCO	1,428	1,805	1,712	1,877	1,922	2,043
TESCO	0	559	530	581	595	633
SEPCO	948	1,198	1,136	1,246	1,276	1,356
TOTAL	25,409	32,121	30,463	33,398	34,197	36,352

As clarified in the Capacity Obligation Report 2022-23 prepared by the Market Operator, the projects planned to be procured in the future by the EX-WAPDA DISCOs have been considered as those committed projects in the approved IGCEP

2022 for which procurement process have been initiated at CPPA-G. Those committed projects for which procurement process has not been initiated at CPPA-G and DISCOs have also not provided any information on their procurement on bilateral basis have been excluded from the planned projects.

Compliance Percentage:

The level of compliance, in terms of percentage above / (below), to the determined capacity obligation is as below:

DISCO	Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27
IESCO	14.3%	15.1%	4.6%	8.5%	32.1%	77.3%
PESCO	35.9%	45.1%	30.1%	36.1%	66.5%	128.6%
FESCO	12.0%	6.0%	-6.1%	-1.9%	20.0%	61.7%
LESCO	2.9%	7.6%	-2.6%	2.8%	26.1%	71.7%
GEPCO	13.6%	1.6%	-7.5%	-3.3%	18.3%	60.1%
MEPCO	23.5%	0.9%	-10.0%	-6.8%	13.1%	51.5%
HESCO	43.5%	15.4%	5.6%	11.8%	38.1%	89.2%
QESCO	71.0%	41.5%	30.0%	37.8%	70.5%	132.0%
TESCO	0.0%	-5.2%	-13.7%	-9.6%	10.5%	49.3%
SEPCO	37.4%	5.7%	-1.2%	6.8%	34.7%	88.2%
TOTAL	19.6%	11.4%	0.5%	5.3%	28.9%	74.7%

Compliance Status:

DISCO	Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27
IESCO	Compliance	Compliance	Compliance	Compliance	Compliance	Compliance
PESCO	Compliance	Compliance	Compliance	Compliance	Compliance	Compliance
FESCO	Compliance	Compliance	Serious Non-Compliance	Compliance	Compliance	Compliance
LESCO	Compliance	Compliance	Minor Non-Compliance	Compliance	Compliance	Compliance
GEPCO	Compliance	Compliance	Serious Non-Compliance	Minor Non-Compliance	Compliance	Compliance
MEPCO	Compliance	Compliance	Serious Non-Compliance	Serious Non-Compliance	Compliance	Compliance
HESCO	Compliance	Compliance	Compliance	Compliance	Compliance	Compliance
QESCO	Compliance	Compliance	Compliance	Compliance	Compliance	Compliance
TESCO	Compliance	Serious Non-Compliance	Serious Non-Compliance	Serious Non-Compliance	Compliance	Compliance
SEPCO	Compliance	Compliance	Compliance	Compliance	Compliance	Compliance
Total	Compliance	Compliance	Compliance	Compliance	Compliance	Compliance

In view of the fundamental responsibility for ensuring adequate supply for their regulated customers the XW-DISCOs intend to tap in to the committed, not yet contracted, capacities indicated in the approved IGCEP 2022. Further, as per directions of the Government of Pakistan, the SOLRs have already embarked upon projects for solarization of 11 kV feeder through distribution generation solar parks. Additionally, the KAPCO considered as retired in the Capacity Obligation Report 2022-23, has been retained at 500 MW firm capacity (as per approved IGCEP 2022) in the procurement to meet with transmission constraints. Adjusting for the above additional capacities, the position on compliance with the Capacity Obligation is expected to further improve during the time horizon of this Power Acquisition Programme. The year-wise / SOLR-wise Expected Credited Firm Capacity (MW), %age compliance to the Capacity Obligation and level of compliance, based on the said additional capacities of power generation, are summarized as below:

Credited/Proposed Firm Capacity (MW):

DISCO	Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27
IESCO	2,579	3,317	3,101	3,465	3,556	3,724
PESCO	3,718	4,211	3,955	4,417	4,532	4,745
FESCO	3,326	4,277	4,193	4,567	4,684	4,900
LESCO	5,362	6,895	6,575	7,286	7,474	7,823
GEPCO	2,496	3,209	3,180	3,444	3,531	3,694
MEPCO	4,335	5,574	5,628	5,995	6,147	6,429
HESCO	1,217	1,565	1,479	1,650	1,693	1,772
QESCO	1,428	1,836	1,716	1,918	1,968	2,061
TESCO	0	600	600	638	653	682
SEPCO	948	1,219	1,150	1,285	1,318	1,379
TOTAL	25,409	32,703	31,576	34,665	35,554	37,210

Compliance Percentage:

DISCO	Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27
IESCO	14.3%	17.1%	4.9%	10.9%	35.3%	79.3%
PESCO	35.9%	47.6%	31.0%	39.6%	71.2%	132.0%
FESCO	12.0%	7.8%	-1.3%	2.5%	25.6%	66.8%
LESCO	2.9%	9.4%	-0.4%	6.3%	30.6%	75.5%
GEPCO	13.6%	3.3%	-1.7%	1.5%	24.3%	66.0%
MEPCO	23.5%	2.6%	-2.5%	-1.9%	19.1%	57.4%
HESCO	43.5%	17.4%	7.0%	15.3%	42.8%	92.9%
QESCO	71.0%	44.0%	30.3%	40.8%	74.6%	134.6%
TESCO	0.0%	1.7%	-2.4%	-0.8%	21.2%	61.3%
SEPCO	0.0%	7.6%	0.0%	10.1%	39.1%	91.9%
TOTAL	0.0%	13.4%	4.2%	9.3%	34.0%	79.2%

DISCO	Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27
IESCO	Compliance	Compliance	Compliance	Compliance	Compliance	Compliance
PESCO	Compliance	Compliance	Compliance	Compliance	Compliance	Compliance
FESCO	Compliance	Compliance	Compliance	Compliance	Compliance	Compliance
LESCO	Compliance	Compliance	Compliance	Compliance	Compliance	Compliance
GEPCO	Compliance	Compliance	Compliance	Compliance	Compliance	Compliance
MEPCO	Compliance	Compliance	Minor Non-Compliance	Compliance	Compliance	Compliance
HESCO	Compliance	Compliance	Compliance	Compliance	Compliance	Compliance
QESCO	Compliance	Compliance	Compliance	Compliance	Compliance	Compliance
TESCO	Compliance	Compliance	Minor Non-Compliance	Compliance	Compliance	Compliance
SEPCO	Compliance	Compliance	Compliance	Compliance	Compliance	Compliance
Total	Compliance	Compliance	Compliance	Compliance	Compliance	Compliance

As a result of proposed procurements, as detailed in Section 5 of this document, and without prejudice to the intermittent individual deficiencies at some DISCOs, the combined position of all DISCOs, considering system a whole, stands compliant to the capacity obligation determined under the provisions of Market Commercial Code. With suitable adjustments in inter DISCO adjustment of allocation factors, the said intermittent individual deficiencies at some DISCOs can pragmatically be mitigated with least cost to the system.

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1. INTRODUCTION

This Combined Power Acquisition Programme (PAP) of all XW-DISCOs is prepared pursuant to the requirements of Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (the Act), NEPRA Licensing (Electric Power Supplier) Regulations, 2022 (the Licensing Regulations) and NEPRA (Electric Power Procurement) Regulations, 2022 (the Procurement Regulations) covering the next 5-year time span from 2022-23 as current year and 2023-24 to 2026-27 as plan years. This PAP takes primary inputs from the Capacity Obligation Report 2022-23 prepared by the Market Operator and aims, at all times, demonstrating compliance with the capacity obligations determined in accordance with the Market Commercial Code. While the Capacity Obligation Report 2022-23 prepared by the Market Operator is annexed separately (**Annex-IV**), however, for the purpose of continuity of this document and compliance to the requirements of relevant regulations, this document includes detailed workings with regard to the Capacity Obligation, Credited Firm Capacity and status of compliance to the said Capacity Obligation. In line with the regulations and said Capacity Obligation Report 2022-23, this document is based on Medium-Term Load Forecasts (MTLF) based upon Power Market Survey (PMS) Model, recently prepared and submitted by all XW-DISCOs, with 2021-22 as base year and forecast horizon covering 10 plan years from 2022-23 to 2031-32. First 5 years of the said latest MTLF of XW-DISCOs have been adopted for assessment of security of supply to their regulated customers over the said time horizon. As per guidance provided in regulation 6 of the Procurement Regulations, besides energy and peak demand requirements over the plan years, this document is aligned with the stipulations of approved Market Commercial Code and the IGCEP 2022 recently approved by NEPRA. In line with the said Capacity Obligation Report 2022-23, in addition to the existing contracted capacities, the projects planned to be procured in the future by the EX-WAPDA DISCOs have been considered as those committed projects in the approved IGCEP 2022 for which procurement process have been initiated at CPPA-G. Those committed projects for which procurement process has not been initiated at CPPA-G and DISCOs have also not provided any information on their procurement on bilateral basis have been excluded from the planned projects. For calculation of DISCOs' shares in total generation capacity, Commercial Allocation Factors as defined in Market Commercial Code (MCC) are used.

The Capacity Obligation calculated based on forecast peak demands of DISCOs are compared with contracted generation firm capacity for the next 5 years to assess the security of supply for their regulated consumers. Any shortfall in contracted capacity, is to be procured in the light of the said Procurement Regulations, 2022.

1.1. Regulatory Compliance:

Relevant provisions of the Act, the Licensing Regulations and the Procurement Regulations are provided below as a matter of record, source of guidance and touchstone to the compliance thereof.

1.1.1. NEPRA Act:

Section 1(3) of **The Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (Amended)** is reproduced below;

“[1(3) It shall come into force at once, except sections 23A, 23B, 23G and 23H which shall come into force within a period of five years of coming into force of the Regulation of Generation, Transmission and Distribution of Electric Power (Amendment) Act, 2018 or on such earlier date as the Federal Government may, by notification in the official Gazette, appoint.]”

Section 32 of **The Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (Amended)** is reproduced below;

“32. Investment and power acquisition programmes. — (1) The Authority shall, within eighteen months from the commencement of this Act, [specify] procedures and standards for the Authority’s prior approval of the transmission companies’ and distribution companies’ investment and power acquisition programmes.

(2) Any procedures [specified] by the Authority under this section shall advance the goal of minimizing regulatory oversight of contracts entered into by the national grid company [, the provincial grid companies] and distribution companies.

(3) Any investment programme or power acquisition programme, approved by the Authority under this section shall take into account the national energy plans issued by the Federal Government.

(4) Upon the Authority’s approval of an investment programmes or a power acquisition programme, the Authority shall, subject to such terms and conditions, including rates and charges of electric power, permit the distribution company to enter into long term contracts for power purchases.”

1.1.2. NEPRA Licensing (Electric Power Supplier) Regulations, 2022:

The regulation 12 of **NEPRA Licensing (Electric Power Supplier) Regulations, 2022** is reproduced as below;

“12. Power acquisition programme. - (1) An electric power supplier shall submit to the Authority its power acquisition programme on annual basis in accordance with the Act, power procurement regulations and other applicable documents.

(2) The competitive supplier's power acquisition programme shall be submitted for information of the Authority and other licensees for relevant power systems planning and may not require approval of the Authority.

(3) The supplier of last resort's power acquisition programme shall require approval of the Authority.

(4) The supplier of last resort shall establish adequate communication and information sharing mechanism with the concerned distribution licensee to periodically obtain information about the prospective consumers who have submitted an application for installation of an electricity connection to develop its power acquisition programmes.”

1.1.3. NEPRA Performance Standards (Electric Power Suppliers) Regulations, 2022:

Regulation 3(a) of NEPRA Performance Standards (Electric Power Suppliers) Regulations, 2022 defines PS 1 reproduced below;

“3(a) Performance Standard I — Capacity Obligations (PS 1)

- (i) An electric power supplier shall ensure that it has adequate arrangements either from its own generation or through contracts with electric power traders or generation licensees or generation companies, as the case may be, to fully meet its capacity obligations associated with supply of electric power to its consumers, in accordance with the applicable documents:

Provided that capacity obligations of an electric power supplier supplying to consumers connected, directly or indirectly, with the National Grid shall be determined in accordance with the Market Commercial Code;

- (ii) An electric power supplier shall be considered in compliance with PS 1, if it successfully met its 95% or above capacity obligations in the respective year;”

1.1.4. NEPRA (Electric Power Procurement) Regulations, 2022:

NEPRA (Electric Power Procurement) Regulations, 2022 obligates an electric power supplier to plan in advance and ensure security of supply for its consumers by planning power procurement in adequate quantity.

Regulation 2(1) of these Regulations defines following terms as;

“(h)“bidding documents” means the documents including templates of agreement(s), RFP(s), and any other supporting document prepared and submitted by the Independent Auction Administer or the supplier of last resort conducting the competitive auction, as the case may be, and approved by the Authority;”

“(i) “Commercial Code” or “Market Commercial Code” means the commercial code prepared and maintained by the market operator pursuant to sections 23A and 23B of the Act and approved by the Authority; “

“(j) “competitive auction” means a competitive process of prequalification, obtaining bids and auction award, organized and carried out by the Independent Auction Administrator or a supplier of last resort, as the case may be, in accordance with these regulations;”

“(s) “Independent Auction Administrator” or “IAA” means any entity registered with the Authority to provide the services of organization and administration of competitive auctions for electric power procurement by electric power suppliers;”

“(u) “market operator” means a person licensed under section 23A of the Act to perform the functions of the market operator;”

“(y) "power acquisition programme" means the electric power procurement needs and plan of an electric power supplier as specified in these regulations;”

Regulation 4(2) of the Procurement Regulations is reproduced below;

“4(2) An electric power supplier shall ensure that it:

(a) procures adequate electric power to meet its capacity obligations with prudent spatial load forecasts while using the best available information, to avoid under or over contracting:

Provided that the capacity obligations of an electric power supplier engaged in supply of electric power through the national grid shall be calculated in accordance with the Market Commercial Code;

(b) adopts efficient and effective power procurement strategy and risk mitigation mechanisms keeping in view the approved IGCEP, TSEP, network expansion plan(s) and power acquisition programme;”

Regulation 6 of these Regulations states;

“(6) Power acquisition programme for new electric power procurement. —

(1) A supplier of last resort shall prepare a rolling five-year power acquisition programme on an annual basis which shall include:

(a) its requirements in terms of energy and peak demands, in accordance with the Distribution Code and other applicable documents, during the preceding twelve months on actual basis and projections for the subsequent five years;

(b) existing contracted energy and capacity;

(c) its capacity obligations as determined by the market operator in accordance with the Market Commercial Code;

(d) proposed new and firm power procurement during the next three years and indicative procurement for the subsequent two years in accordance with these regulations;

(2) The power acquisition programme shall be prepared by the supplier of last resort in line with the IGCEP, TSEP, network expansion plan(s) and approved investment programme of the concerned distribution licensee, demonstrating compliance with its capacity obligations determined in accordance with the Market Commercial Code:

Provided that for a period of five years from the date of notification of these regulations or such earlier period as may be directed by the Authority, a combined power acquisition programme shall be developed and submitted by the suppliers of last resort, except KE, in consultation with the Independent Auction Administrator.

(4) The share of respective suppliers of last resort in a project selected to meet their combined capacity obligations shall be allocated on pro rata basis keeping in view their respective capacity obligations.”

Regulation 7 of these Regulations stipulates;

“(7) (3) The power acquisition programme shall be submitted by 30th September of every year and approved by the Authority within ninety days from its submission in accordance with these regulations and other applicable documents:

Provided that a supplier of last resort shall submit its power acquisition programme to the Authority within three months from the notification of these regulations and thereafter the power acquisition programme shall be submitted to the Authority along with any proposed changes, on an annual basis i.e., 30th September of every year.

(4) The approved power acquisition programme shall be definitive for the initial three years and indicative for the subsequent two years for new electric power procurement.

(5) A supplier of last resort shall ensure that its tariff petition is prepared and submitted in accordance with the power acquisition programme approved by the Authority under these regulations.”

1.2. Input Factors:

1.2.1. Commercial Allocation Factors:

The share of DISCOs in Legacy Generation is calculated based upon commercial allocation factors defined in **Market Commercial Code (MCC)** section 18.2.5.2. Table 8 of this section is reproduced below;

*Table 1-1 Supplier of Last Resort Allocation Factors **

Supplier	Allocation Factor
LESCO	21.10%
GEPCO	9.82%
FESCO	13.09%
IESCO	10.15%
MEPCO	17.06%
PESCO	12.89%
HESCO	4.79%
QESCO	5.62%
TESCO	1.74%
SEPCO	3.73%
KE	As per Bilateral Contract

* These factors may change in future due to surplus supply in national system and basis of these factors may also change to align with co-incidental demand of XW-DISCOs.

1.2.2. Capacity Obligation Percentage:

In line with Capacity Obligation Report 2022-23 prepared by Market Operator the Capacity Obligation Percentage used for preparation of this PAP is **100%** for Current Year, Year-1 and Year-2, whereas the same for Year-3 and Year-4 is taken at **80%** and **60%**, respectively, to assess and ensure security of supply for next 5 years and comply with Authority directions to plan in advance the procurement of adequate quantity of electric supply for regulated consumers within the respective Service Territories. However, Procurement Programme for first three years is deterministic while indicative for subsequent two years.

1.2.3. Transmission Losses:

To calculate demand uplifted up to Generation Level, Transmission Losses of **2.639%** are used for next 5 years as per NEPRA's latest determination No. NEPRA/R/ADG(TRF)/TRF-533/NTDC-2020/17537-17539 dated September 16, 2022 of NTDCL tariff for the years 2019-20, 2020-21 and 2021-22.

1.2.4. Firm Capacity Calculation:

For calculation of initial firm capacity of upcoming generation projects, equivalent availability factors listed in Market Commercial Code (MCC) section 8.4.2.1 are used. Table 1 of the said section is reproduced below;

Table 1-2 Equivalent Availability Factors

Sr. No.	Generation Technology	Equivalent Availability Factor
1	Dispatchable Technologies	
1.1	Hydro with reservoir	0.92
1.2	Thermal (either liquid fuels, gas or coal fired)	0.92
1.3	Bagasse	0.92
1.4	Thermal Solar	0.87
1.5	Nuclear	0.87
2	Non-Dispatchable Technologies	
2.1	Hydro run of river	Based on the feasibility study
2.2	Wind	0.30
2.3	Solar PV	0.22

1.2.5. Reserve Margin:

A reserve margin of **10%** is used as provided in Market Commercial Code (MCC) section 9.2.4.3.

1.3. CLARIFICATIONS/ DISCLAIMER:

1. This combined Power Acquisition Programme (PAP) has been prepared in compliance of the Regulations without prejudice to the legal status of various essential enablers, e.g., Market Operator, System Operator, Independent Auction Administrator, and final Market Commercial Code.
2. In the absence of any one designate entity responsible for combining of PAP of DISCOs, the combined PAP in hand has been prepared and finalized through coordinated efforts amongst XW-DISCOs.
3. Although this document is prepared with collective efforts of all XW-DISCOs, submission of the same to the Authority will be by each DISCO individually.
4. In the absence of any registered Independent Auction Administrator, the consultation indicated in the proviso to regulation 6(2) of the NEPRA (Electric Power Procurement) Regulations, 2022 was dispensed with.
5. Firm Capacities of Existing and Planned projects have been considered as per Capacity Obligation Report 2022-23 issued by CPPA-G in their role as designate Market Operation (MO).
6. The capacities (committed, candidate, retirement etc), subject to the contents of Capacity Obligation Report 2023, are based on IGCEP-2022 base case scenario.
7. Allocation of KAPCO (for Constraint Removal) is made each year on pro-rata basis as per capacity requirement of each DISCO in respective year. Whereas, for years where all DISCOs are compliant, allocation is based upon commercial allocation factors as provided in 1.2.1. above.
8. Timelines of Planned generation projects, for this PAP, are adopted as per IGCEP-2022, and availability thereof, for the purpose of firm capacity, is considered in the year of commissioning.
9. Accuracy of Demand Forecast and, therefore, the Capacity Obligation is dependent upon economic stability of the country. Due to current economic situation in the country, the future demand may vary from demand forecast, with corresponding effect on the Capacity Obligation determined as per MCC.
10. In line with the Capacity Obligation Report 2022-23, the Commercial Allocation Factors of Legacy Generation are considered as per Market Commercial Code (MCC).
11. Reserve Margin is considered as per MCC.
12. In compliance of Ministry of Energy (Power Division)'s directions to undertake solarization of 11 KV feeders, DISCOs have identified a number of 11 KV feeders for solarization through 3rd party Solar Parks ranging from 1 to

4 MW each with an overall aggregate estimated capacity of 1224 MWp. Based on the methodology for calculation of initial firm capacity as per Market Commercial Code clause 8.4.2.1, the initial firm capacity is assessed at 269 MW. Subject to realization of the timelines of the project, the said additional Solar PV Distributed Generation capacity will be available by end of September, 2023. Accordingly, the minor non-compliances are expected to be mitigated.

13. The approved IGCEP 2022, at page 57, takes Net-Metering (PV) distributed generation as part of Committed Projects (Table 5-4 of IGCEP 2022). Notwithstanding the position that the Net-Metering arrangements essentially impacts the energy demand, this document, in line with approved IGCEP 2022, takes the Net-Metering (PV) as source of supply in each of the relevant years.
14. As a result of dry-run implementation of approved Market Commercial Code, a number of changes may be required in the said MCC. Major changes are suggested as below:
 - a. The capacity allocation factors may be updated in accordance with co-incident demand of XW-DISCOs.
 - b. The capacity obligation in this PAP is arrived at as per current methodology provided in the MCC; which adds Reserve Margin to arrive at capacity obligation of each XW-DISCO. Noting that demand forecast of each DISCO provides non-coincident peak load requirements thereof, therefore, the Reserve Margin may have to be dispensed with for the time beings.
15. The available capacity for future solar power generation projects is taken with factors of 0.22. Considering that the peak solar generation coincides with identified critical hours, the factor may have to be adjusted suitably.
16. This activity being exercised by XW-DISCOs for the first time, errors and omissions are expected.

2. DEMAND FORECAST RESULTS

As already mentioned, that this PAP is based on Medium Term Load Forecasts (MTLFs) for the period 2022-23 to 2031-32 recently prepared and submitted by DISCO to the NEPRA. These forecasts are based upon Power Market Survey (PMS) model which utilized historical database of sale and demand for each grid station of a DISCO, input factors such as load factors, coincidence factors and loss reduction plan to calculate expected sale and demand for next ten (10) years. This forecast is performed for each grid station level as well as DISCO level. The demand forecasts (energy and capacity) for each XW-DISCO are provided in below:

2.1. Historical Demand and Future Forecasts:

2.1.1. IESCO:

Table 2-IESCO's Historical Demand and Forecast

IESCO						
Year		Energy (GWh)		Peak Demand (MW)		
	Months	Actual	Projected	Actual	Projected	
	2021-22	July	1,493	-	2,369	-
Aug		1,499	-	2,481	-	
Sep		1,344	-	2,165	-	
Oct		970	-	1,781	-	
Nov		738	-	1,333	-	
Dec		827	-	1,435	-	
Jan		857	-	1,468	-	
Feb		721	-	1,404	-	
Mar		841	-	1,410	-	
Apr		1,110	-	1,671	-	
May		1,309	-	2,124	-	
Jun		1,318	-	2,404	-	
Total			13,027	-	2,481	-
2022-23		-	-	13,027	-	2,508
2023-24	-	-	13,749	-	2,616	
2024-25	-	-	14,556	-	2,765	
2025-26	-	-	15,327	-	2,908	
2026-27	-	-	16,199	-	3,071	
Total			72,858			

2.1.2. PESCO:

Table 2-2PESCO's Historical Demand and Forecast

PESCO					
Year		Energy (GWh)		Peak Demand (MW)	
	Months	Actual	Projected	Actual	Projected
2021-22	July	1,831	-	2,274	-
	Aug	1,766	-	2,211	-
	Sep	1,643	-	2,117	-
	Oct	1,217	-	1,918	-
	Nov	1,056	-	1,529	-
	Dec	1,236	-	1,936	-
	Jan	1,243	-	1,686	-
	Feb	1,080	-	1,707	-
	Mar	1,110	-	1,555	-
	Apr	1,357	-	2,002	-
	May	1,518	-	2,180	-
	Jun	1,505	-	2,369	-
	Total	16,560	-	2,369	-
	2022-23	-	-	17,676	-
2023-24	-	-	18,808	-	2,672
2024-25	-	-	19,735	-	2,800
2025-26	-	-	20,645	-	2,929
2026-27	-	-	21,302	-	3,024
Total			98,166		

2.1.3. FESCO:

Table 2-3 FESCO's Historical Demand and Forecast

FESCO					
Year		Energy (GWh)		Peak Demand (MW)	
	Months	Actual	Projected	Actual	Projected
2021-22	July	1,890	-	3,292	-
	Aug	1,995	-	3,234	-
	Sep	1,729	-	3,158	-
	Oct	1,421	-	2,734	-
	Nov	999	-	1,762	-
	Dec	1,009	-	1,794	-
	Jan	978	-	1,674	-
	Feb	934	-	1,881	-
	Mar	1,341	-	2,274	-
	Apr	1,640	-	2,553	-
	May	1,860	-	3,179	-
	Jun	1,716	-	3,136	-
	Total		17,512	-	3,292
2022-23	-	-	18,479	-	3,512
2023-24	-	-	19,597	-	3,761
2024-25	-	-	20,448	-	3,944
2025-26	-	-	21,343	-	4,126
2026-27	-	-	22,362	-	4,342
Total			102,229		

2.1.4. LESCO:

Table 2-4 LESCO's Historical Demand and Forecast

LESCO					
Year		Energy (GWh)		Peak Demand (MW)	
	Months	Actual	Projected	Actual	Projected
2021-22	July	3,012	-	4,499	-
	Aug	3,141	-	4,571	-
	Sep	2,657	-	4,282	-
	Oct	2,238	-	3,758	-
	Nov	1,602	-	2,876	-
	Dec	1,716	-	3,245	-
	Jan	1,819	-	3,110	-
	Feb	1,554	-	2,974	-
	Mar	2,092	-	3,212	-
	Apr	2,618	-	4,497	-
	May	2,949	-	4,435	-
	Jun	2,937	-	5,205	-
	Total	28,334	-	5,205	-
	2022-23	-	-	30,268	-
2023-24	-	-	31,709	-	5,844
2024-25	-	-	32,649	-	6,067
2025-26	-	-	33,994	-	6,329
2026-27	-	-	35,302	-	6,589
Total			163,922		

2.1.5. GEPCO:

Table 2-5GEPCO's Historical Demand and Forecast

GEPCO						
Year		Energy (GWh)		Peak Demand (MW)		
	Months	Actual	Projected	Actual	Projected	
	2021-22	July	1,456	-	2,668	-
Aug		1,602	-	2,695	-	
Sep		1,328	-	2,523	-	
Oct		1,004	-	2,111	-	
Nov		678	-	1,335	-	
Dec		685	-	1,411	-	
Jan		663	-	1,357	-	
Feb		589	-	1,276	-	
Mar		882	-	1,707	-	
Apr		1,148	-	1,979	-	
May		1,332	-	2,117	-	
Jun		1,311	-	2,365	-	
Total			12,678	-	2,695	-
2022-23		-	-	12,951	-	2,749
2023-24	-	-	13,744	-	2,863	
2024-25	-	-	14,460	-	3,003	
2025-26	-	-	15,172	-	3,142	
2026-27	-	-	15,935	-	3,290	
Total			72,263			

2.1.6. MEPCO:

Table 2-6 MEPCO's Historical Demand and Forecast

MEPCO					
Year		Energy (GWh)		Peak Demand (MW)	
	Months	Actual	Projected	Actual	Projected
	2021-22	July	2,710	-	4,501
Aug		2,802	-	4,427	-
Sep		2,335	-	4,180	-
Oct		1,788	-	3,456	-
Nov		1,157	-	2,102	-
Dec		1,133	-	2,080	-
Jan		1,094	-	2,208	-
Feb		1,113	-	2,323	-
Mar		1,637	-	2,782	-
Apr		2,214	-	3,408	-
May		2,627	-	4,027	-
Jun		2,123	-	4,313	-
Total			22,734	-	4,501
2022-23	-	-	24,014	-	4,808
2023-24	-	-	25,436	-	5,110
2024-25	-	-	26,762	-	5,410
2025-26	-	-	28,122	-	5,709
2026-27	-	-	29,533	-	6,039
Total			133,867		

2.1.7. HESCO:

Table 2-7 HESCO's Historical Demand and Forecast

HESCO					
Year		Energy (GWh)		Peak Demand (MW)	
	Months	Actual	Projected	Actual	Projected
2021-22	July	621	-	1,034	-
	Aug	590	-	1,065	-
	Sep	572	-	1,084	-
	Oct	492	-	954	-
	Nov	336	-	659	-
	Dec	294	-	458	-
	Jan	295	-	479	-
	Feb	269	-	510	-
	Mar	406	-	772	-
	Apr	551	-	1,134	-
	May	618	-	1,136	-
	Jun	567	-	1,018	-
	Total	5,611	-	1,136	-
	2022-23	-	-	5,828	-
2023-24	-	-	6,041	-	1,223
2024-25	-	-	6,277	-	1,267
2025-26	-	-	6,520	-	1,312
2026-27	-	-	6,758	-	1,358
Total			31,424		

2.1.8. QESCO:

Table 2-8 QESCO's Historical Demand and Forecast

QESCO					
Year		Energy (GWh)		Peak Demand (MW)	
	Months	Actual	Projected	Actual	Projected
	2021-22	July	639	-	1,070
Aug		643	-	1,049	-
Sep		579	-	1,020	-
Oct		526	-	921	-
Nov		513	-	996	-
Dec		531	-	961	-
Jan		461	-	940	-
Feb		472	-	995	-
Mar		549	-	966	-
Apr		590	-	979	-
May		627	-	999	-
Jun		586	-	967	-
Total		6,716	-	1,070	-
2022-23		-	-	6,934	-
2023-24	-	-	7,131	-	1,166
2024-25	-	-	7,327	-	1,206
2025-26	-	-	7,556	-	1,247
2026-27	-	-	7,861	-	1,299
Total			36,809		

2.1.9. TESCO:

Table 2-9TESCO's Historical Demand and Forecast

TESCO						
Year		Energy (GWh)		Peak Demand (MW)		
	Months	Actual	Projected	Actual	Projected	
	2021-22	July	175	-	382	-
Aug		187	-	373	-	
Sep		185	-	364	-	
Oct		192	-	403	-	
Nov		207	-	423	-	
Dec		206	-	508	-	
Jan		186	-	415	-	
Feb		195	-	420	-	
Mar		207	-	406	-	
Apr		188	-	476	-	
May		167	-	397	-	
Jun		189	-	429	-	
Total			2,284	-	508	-
2022-23		-	-	2,384	-	522
2023-24	-	-	2,488	-	544	
2024-25	-	-	2,595	-	569	
2025-26	-	-	2,735	-	596	
2026-27	-	-	2,883	-	625	
Total			13,085			

2.1.10. SEPCO:

Table 2-10 SEPCO's Historical Demand and Forecast

SEPCO					
Year		Energy (GWh)		Peak Demand (MW)	
2021-22	Months	Actual	Projected	Actual	Projected
	July	561	-	961	-
	Aug	559	-	942	-
	Sep	505	-	778	-
	Oct	361	-	693	-
	Nov	226	-	391	-
	Dec	209	-	330	-
	Jan	195	-	312	-
	Feb	181	-	294	-
	Mar	268	-	390	-
	Apr	415	-	667	-
	May	527	-	811	-
	Jun	483	-	961	-
	Total	4,490	-	961	-
2022-23	-	-	5,058	-	1,003
2023-24	-	-	5,117	-	1,018
2024-25	-	-	5,282	-	1,033
2025-26	-	-	5,434	-	1,048
2026-27	-	-	5,708	-	1,063
Total			26,599		

2.2. Capacity Obligation of DISCOs:

The individual and combined Capacity Obligation (in terms of MW) of XW-DISCOs, in the light of approved MCC, is tabulated below;

Table 2-11 Capacity Obligation of XW-DISCOs

SoLR	Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26 (80%)	Year-4 2026-27 (60%)
IESCO	2,256	2,834	2,956	3,124	2,629	2,082
PESCO	2,736	2,854	3,019	3,163	2,647	2,050
FESCO	2,969	3,968	4,249	4,456	3,730	2,944
LESCO	5,210	6,302	6,603	6,855	5,721	4,466
GEPCO	2,198	3,106	3,235	3,393	2,840	2,230
MEPCO	3,510	5,432	5,773	6,112	5,160	4,094
HESCO	848	1,333	1,382	1,431	1,186	920
QESCO	835	1,276	1,317	1,363	1,127	881
TESCO	0	590	615	643	538	424
SEPCO	690	1,133	1,150	1,167	947	721
Total	21,252	28,828	30,299	31,707	26,525	20,812

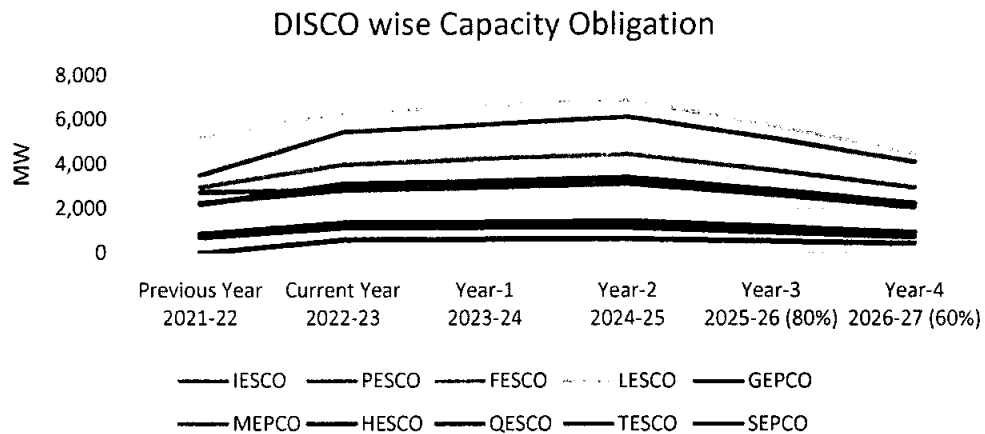


Figure 2-1 Capacity Obligations of XW-DISCOs for next 5 years

Detailed Medium-Term Load Forecast (MTLF) Reports forming basis for this Power Acquisition Programme have already been submitted by DISCOs for consideration of the Authority.

3. CONTRACTED FIRM CAPACITY

DISCOs existing contracts for generation capacity consist entirely of Legacy Generation allocated to DISCOs as per commercial allocation factors already discussed in 1.2.1. Apart from existing installed generation, several generation projects are planned/ committed for future years as provided in IGCEP 2022, approved by the Authority. Similarly, a few generation projects are retiring during next 5 years as provided in IGCEP 2022. Detail of firm capacities of existing/ planned generation has been communicated by CPPA-G (Market Operator) vide CPPA-G/2023/MOD/0126-0128 dated March 14, 2023 (Annex-IV).

3.1. IGCEP 2022:

The Authority has recently approved IGCEP 2022 which enlists committed / contracted projects as well as candidate projects for next 10 years. The IGCEP forms, besides the mentioned MTLFs, another fundamental source for this Power Acquisition Programme (PAP) as, in line with the regulations, future procurement is to be made as per candidate projects enumerated in the IGCEP. Summary of Generation in next 10 years is tabulated below;

Table 3-1 Summary of Generation as per IGCEP

Fiscal Year	Local Coal	Imported Coal	HPP	Solar	Wind	Bagasse	Cross Border	RLNG	Nuclear	Committed Capacity Addition	Candidate Capacity Addition			Cumulative Capacity Addition
											Solar	Hydro	Wind	
2022-23	1,980	660	237	520	0	0	0	1,263	0	4,660	0	0	0	4,660
2023-24	0	0	342	653	100	0	0	0	0	1,095	500	0	0	1,595
2024-25	0	0	2,365	370	0	32	1,000	0	0	3,767	3,870	10	500	8,147
2025-26	300	0	654	370	0	0	0	0	0	1,324	750	13	500	2,587
2026-27	0	0	2,558	370	0	0	0	0	0	2,928	0	0	0	2,928
2027-28	0	0	545	370	0	0	0	0	0	915	0	0	2,403	3,318
Total	2,280	660	6,701	2,653	100	32	1,000	1,263	0	14,689	5,120	23	3,403	23,235

IGCEP Comitted Projects 2022-27

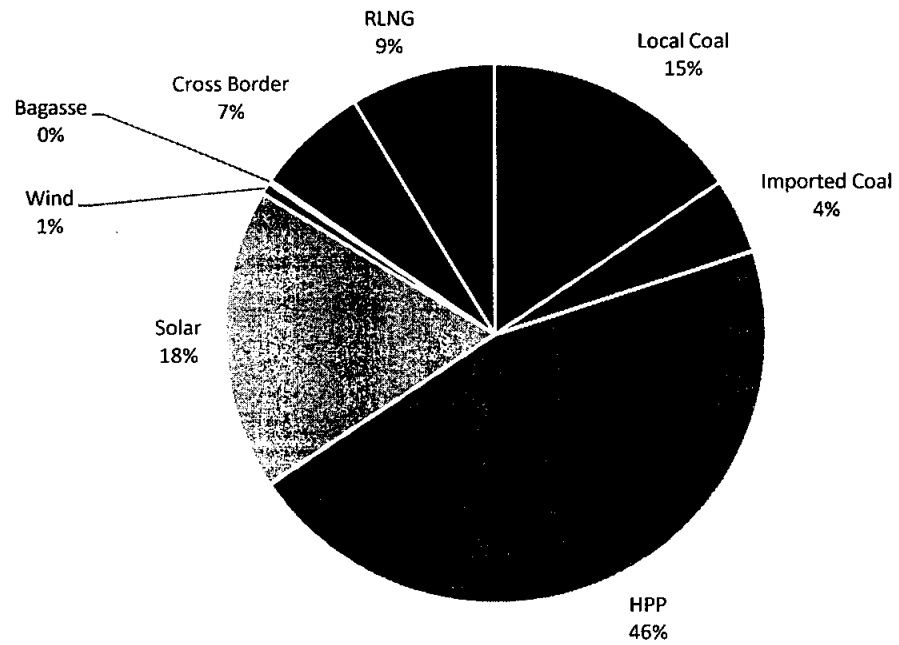


Figure 3-1 Technology Mix of Committed Generation

3.2. Existing Installed/ Commissioned Generation Plants:

Summary of Existing Generation Plants and DISCO-wise allocation thereof is tabulated below;

Table 3-2Detail of Existing Generation and allocation to XW-DISCOs

Contracted Capacity under Legacy Contracts – Commissioned								
1	2	3	4	5	6	7	8	9
SoLR	No. of Total Legacy Contracts	Total Installed Capacity (MW)	Total Net Dependable Capacity (MW)	Total Firm Capacity (MW)	Firm Capacity (MW) for Capacity Obligation of KE	Firm Capacity (MW) for Capacity Obligation of DISCOs	Allocation Factor	Contracted Firm Capacity (MW) (7*8)
IESCO	151	38,010	22,430	31,040	1,200	29,840	10.15%	3,029
PESCO							12.89%	3,846
FESCO							13.09%	3,906
LESCO							21.10%	6,296
GEPCO							9.82%	2,930
MEPCO							17.06%	5,091
HESCO							4.79%	1,429
QESCO							5.62%	1,677
TESCO							1.74%	519
SEPCO							3.73%	1,113

Complete List of Existing Power Plants is provided at Annex-I.

3.3. Projects to be Retired in Plan Period

Detail of Projects to be retired during plan period (2022-23 to 2026-27) as per IGCEP 2022 is tabulated below;

Table 3-3 Retirement of Projects as per IGCEP

Sr#	Projects	Technology	Installed Capacity (MW)	Initial Firm Capacity (MW)	Retirement
1	KAPCO 3	RLNG	300	273	2022
2	KAPCO 1	RLNG	400	365	2022
3	KAPCO 2	RLNG	900	820	2022
4	Guddu-II U(5-10)	Gas	620	379	2023
5	Jamshoro-I U1	RFO	250	163	2023
6	Jamshoro-II U4	RFO	200	131	2023
7	Muzaffargarh-I U1	RFO	210	94	2023
8	Muzaffargarh-I U2	RFO	210	94	2023
9	Muzaffargarh-I U3	RFO	210	94	2023
10	Muzaffargarh-II U4	RFO	320	143	2023
11	Anoond	SPP	10	10	2024
12	Omni	SPP	13	13	2025
13	Lucky cement	SPP	20	20	2025
14	Thatta Cement	SPP	19	19	2026

* KAPCO 1 & 2 are to be retired in 2022-23, however, the relevant PPA is to be extended due to transmission constraints.

3.4. Summary of Committed Generation projects as per IGCEP:

Year wise total Legacy Generation as per IGCEP-2022 and DISCO-wise allocation thereof is tabulated below;

Table 3-4 Committed Generation for 2022-23 and allocation to DISCOs

Existing Contracted Capacity under Legacy Contracts – Approved/Committed (Not Commissioned) (FY 2022-23)						
1	2	4	5	6	7	8
SoLR Name	Expected Installed Capacity (MW)	Total Firm Capacity (MW)	Firm Capacity (MW) for Capacity Obligation of KE	Firm Capacity (MW) for Capacity Obligation of DISCOs	Allocation Factor	Contracted Firm Capacity (MW) (6*7)
IESCO	4,203	3,743	0	3,743	10.15%	380
PESCO					12.89%	482
FESCO					13.09%	490
LESCO					21.10%	790
GEPCO					9.82%	368
MEPCO					17.06%	639
HESCO					4.79%	179
QESCO					5.62%	210
TESCO					1.74%	65
SEPCO					3.73%	140

Table 3-5 Committed Generation for 2023-24 and allocation to DISCOs

Existing Contracted Capacity under Legacy Contracts – Approved/Committed (Not Commissioned) (FY 2023-24)						
1	2	4	5	6	7	8
SoLR Name	Expected Installed Capacity (MW)	Total Firm Capacity (MW)	Firm Capacity (MW) for Capacity Obligation of KE	Firm Capacity (MW) for Capacity Obligation of DISCOs	Allocation Factor	Contracted Firm Capacity (MW) (6*7)
IESCO	397	290	850	-560	10.15%	-57
PESCO					12.89%	-72
FESCO					13.09%	-73
LESCO					21.10%	-118
GEPCO					9.82%	-55
MEPCO					17.06%	-96
HESCO					4.79%	-27
QESCO					5.62%	-31
TESCO					1.74%	-10
SEPCO					3.73%	-21

Table 3-6 Committed Generation for 2024-25 and allocation to DISCOs

Existing Contracted Capacity under Legacy Contracts – Approved/Committed (Not Commissioned) (FY 2024-25)						
1	2	4	5	6	7	8
SoLR Name	Expected Installed Capacity (MW)	Total Firm Capacity (MW)	Firm Capacity (MW) for Capacity Obligation of KE	Firm Capacity (MW) for Capacity Obligation of DISCOs	Allocation Factor	Contracted Firm Capacity (MW) (6*7)
IESCO	3,303	2,945	0	2,945	10.15%	299
PESCO					12.89%	380
FESCO					13.09%	386
LESCO					21.10%	621
GEPCO					9.82%	289
MEPCO					17.06%	502
HESCO					4.79%	141
QESCO					5.62%	166
TESCO					1.74%	51
SEPCO					3.73%	110

Table 3-7 Committed Generation for 2025-26 and allocation to DISCOs

Existing Contracted Capacity under Legacy Contracts – Approved/Committed (Not Commissioned) (FY 2025-26)						
1	2	4	5	6	7	8
SoLR Name	Expected Installed Capacity (MW)	Total Firm Capacity (MW)	Firm Capacity (MW) for Capacity Obligation of KE	Firm Capacity (MW) for Capacity Obligation of DISCOs	Allocation Factor	Contracted Firm Capacity (MW) (6*7)
IESCO	930	812	0	812	10.15%	82
PESCO					12.89%	105
FESCO					13.09%	106
LESCO					21.10%	171
GEPCO					9.82%	80
MEPCO					17.06%	138
HESCO					4.79%	39
QESCO					5.62%	46
TESCO					1.74%	14
SEPCO					3.73%	30

Table 3-8 Committed Generation for 2026-27 and allocation to DISCOs

Existing Contracted Capacity under Legacy Contracts – Approved/Committed (Not Commissioned) (FY 2026-27)						
1	2	4	5	6	7	8
SoLR Name	Expected Installed Capacity (MW)	Total Firm Capacity (MW)	Firm Capacity (MW) for Capacity Obligation of KE	Firm Capacity (MW) for Capacity Obligation of DISCOs	Allocation Factor	Contracted Firm Capacity (MW) (6*7)
IESCO	2,558	2,174	0	2,174	10.15%	221
PESCO					12.89%	280
FESCO					13.09%	285
LESCO					21.10%	459
GEPCO					9.82%	214
MEPCO					17.06%	371
HESCO					4.79%	104
QESCO					5.62%	122
TESCO					1.74%	38
SEPCO					3.73%	81

Complete List of Committed Projects considered for Capacity Obligation Report are given at Annex-II.

4. SECURITY OF SUPPLY

Security of Supply for regulated consumers of XW-DISCOs is assessed on the basis of total capacity obligation of DISCOs as per Section 2.2. of this PAP and DISCOs allocated firm capacity as per Sections 3.1. and 3.4. hereof. This, however, does not include any future candidate project as per IGCEP-2022 or individual procurement initiatives of each XW-DISCO at their own or under directions from the Government of Pakistan. For clarity of understanding it may be mentioned that the positive (+) Uncontracted means the surplus capacity over the determined capacity obligation and that the negative (-) figures mean the deficiency against the determined capacity obligation.

4.1. Security of Supply Position:

DISCO-Wise security of supply position tabulated below through depicted below;

4.1.1. IESCO:

Table 4-1 IESCO's security of supply position

IESCO							
	Supply Demand	Actual		Forecasted			
		Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27
1	Capacity Obligations (MW)	2,256	2,834	2,956	3,124	2,628	2,082
2	Contracted Commissioned (MW)	2,579	2,881	2,769	2,768	2,767	2,765
3	Committed/ Contracted (MW)	0	380	323	622	704	925
4	Total Credited Capacity (MW) (2+3)	2,579	3,261	3,092	3,390	3,471	3,690
5	Surplus/ (Shortage) of Supply (MW) (4-1)	323	427	137	266	843	1,608
6	CO Compliance (%) Surplus / (Shortage)	14%	15%	5%	9%	32%	77%

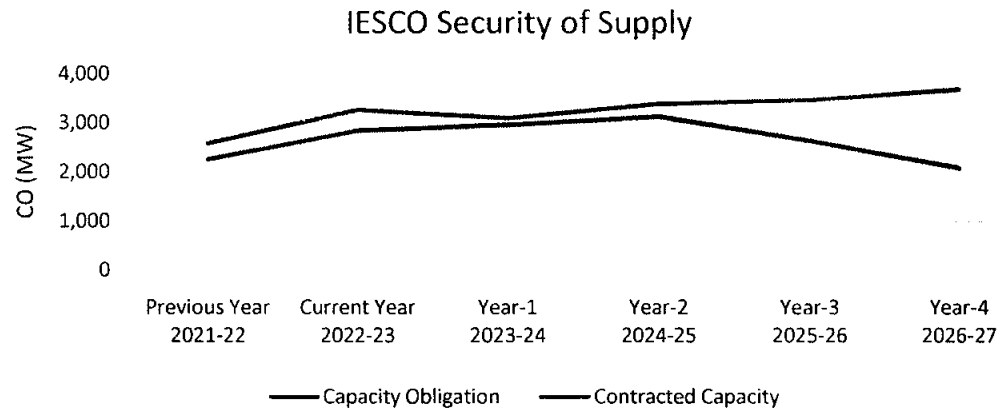


Figure 4-1 IESCO Security of Supply

4.1.2. PESCO:

Table 4-2 PESCO's security of supply position

PESCO							
	Supply Demand	Actual		Forecasted			
		Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27
1	Capacity Obligations (MW)	2,736	2,854	3,019	3,163	2,647	2,050
2	Contracted Commissioned (MW)	3,718	3,658	3,517	3,516	3,514	3,512
3	Committed/ Contracted (MW)	0	482	410	790	894	1,175
4	Total Credited Capacity (MW) (2+3)	3,718	4,141	3,927	4,305	4,408	4,686
5	Surplus/ (Shortage) of Supply (MW) (4-1)	982	1,287	908	1,142	1,761	2,636
6	CO Compliance (%) Surplus / (Shortage)	36%	45%	30%	36%	67%	129%

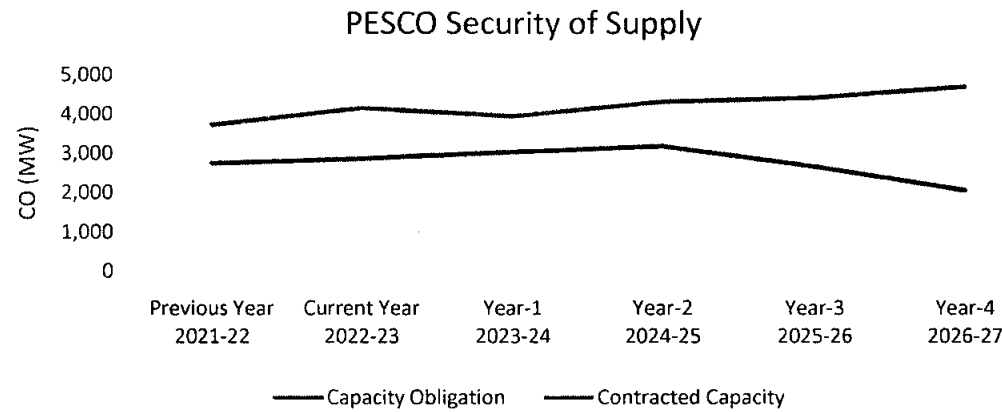


Figure 4-2 PESCO Security of Supply

4.1.3. FESCO:

Table 4-3 FESCO's security of supply position

FESCO							
	Supply Demand	Actual		Forecasted			
		Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27
1	Capacity Obligations (MW)	2,969	3,968	4,249	4,456	3,729	2,943
2	Contracted Commissioned (MW)	3,326	3,715	3,571	3,570	3,568	3,566
3	Committed/ Contracted (MW)	0	490	417	802	908	1,193
4	Total Credited Capacity (MW) (2+3)	3,326	4,205	3,988	4,372	4,477	4,759
5	Surplus/ (Shortage) of Supply (MW) (4-1)	357	237	-261	-84	748	1,816
6	CO Compliance (%) Surplus / (Shortage)	12%	6%	-6%	-2%	20%	62%

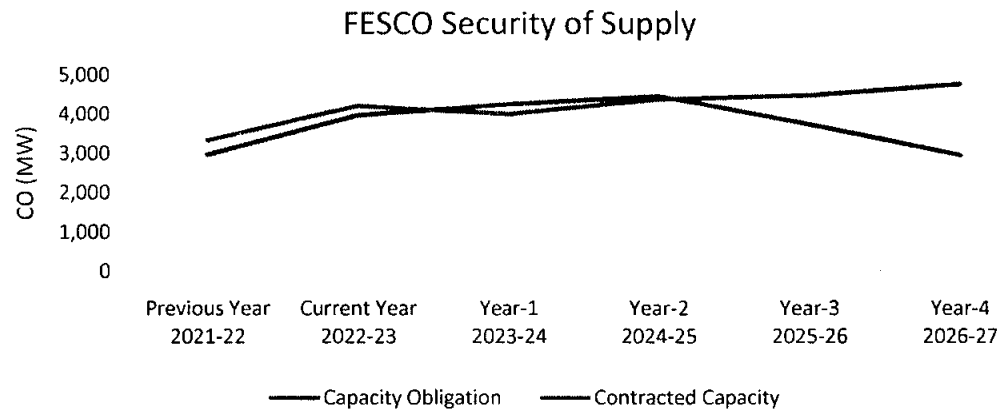


Figure 4-3 FESCO Security of Supply

4.1.4. LESCO:

Table 4-4 LESCO's security of supply position

LESCO							
	Supply Demand	Actual		Forecasted			
		Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27
1	Capacity Obligations (MW)	5,210	6,302	6,603	6,855	5,720	4,467
2	Contracted Commissioned (MW)	5,362	5,989	5,757	5,755	5,752	5,748
3	Committed/ Contracted (MW)	0	790	672	1,293	1,464	1,923
4	Total Credited Capacity (MW) (2+3)	5,362	6,778	6,428	7,048	7,216	7,671
5	Surplus/ (Shortage) of Supply (MW) (4-1)	152	476	-174	193	1,496	3,204
6	CO Compliance (%) Surplus / (Shortage)	3%	8%	-3%	3%	26%	72%

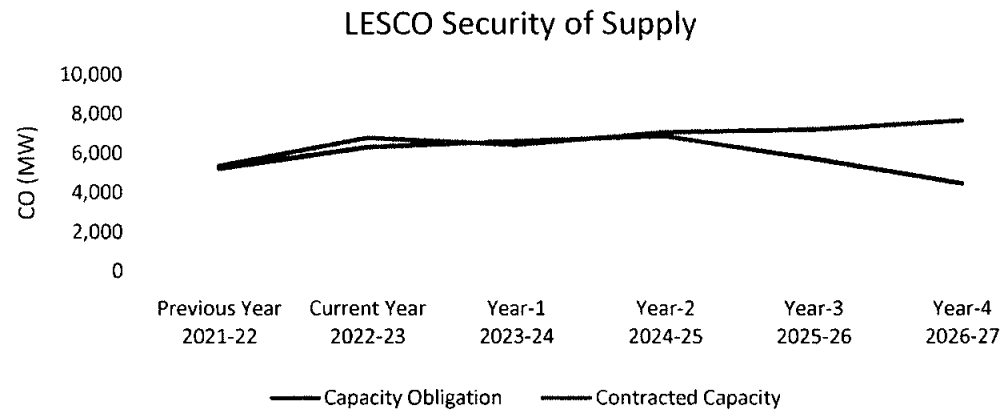


Figure 4-4 LESCO Security of Supply

4.1.5. GEPCO:

Table 4-5 GEPCO's security of supply position

GEPCO							
	Supply Demand	Actual		Forecasted			
		Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27
1	Capacity Obligations (MW)	2,198	3,106	3,235	3,393	2,840	2,230
2	Contracted Commissioned (MW)	2,496	2,787	2,679	2,678	2,677	2,675
3	Committed/ Contracted (MW)	0	368	313	602	681	895
4	Total Credited Capacity (MW) (2+3)	2,496	3,155	2,992	3,280	3,358	3,570
5	Surplus/ (Shortage) of Supply (MW) (4-1)	298	49	-243	-113	519	1,340
6	CO Compliance (%) Surplus / (Shortage)	14%	2%	-8%	-3%	18%	60%

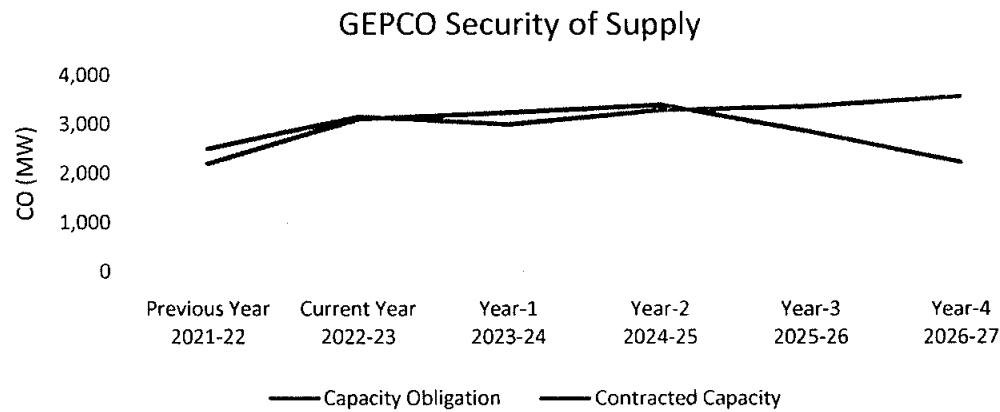


Figure 4-5 GEPCO Security of Supply

4.1.6. MEPCO:

Table 4-6 MEPCO's security of supply position

		MEPCO					
		Actual		Forecasted			
	Supply Demand	Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27
1	Capacity Obligations (MW)	3,510	5,432	5,773	6,112	5,160	4,094
2	Contracted Commissioned (MW)	4,335	4,842	4,655	4,653	4,651	4,648
3	Committed/ Contracted (MW)	0	639	543	1,045	1,184	1,555
4	Total Credited Capacity (MW) (2+3)	4,335	5,480	5,198	5,698	5,835	6,202
5	Surplus/ (Shortage) of Supply (MW) (4-1)	825	48	-576	-414	675	2,109
6	CO Compliance (%) Surplus / (Shortage)	24%	1%	-10%	-7%	13%	52%

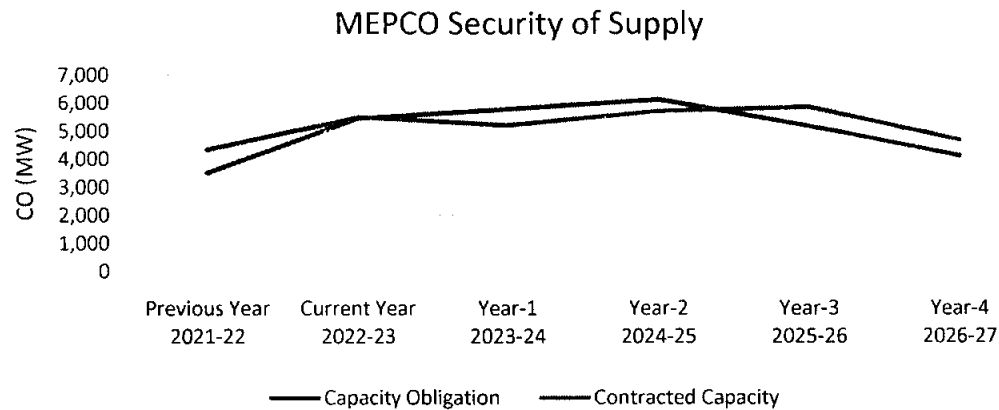


Figure 4-6 MEPCO Security of Supply

4.1.7. HESCO:

Table 4-7 HESCO's security of supply position

HESCO							
	Supply Demand	Actual		Forecasted			
		Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27
1	Capacity Obligations (MW)	848	1,333	1,382	1,431	1,186	921
2	Contracted Commissioned (MW)	1,217	1,359	1,307	1,306	1,306	1,305
3	Committed/ Contracted (MW)	0	179	152	294	332	437
4	Total Credited Capacity (MW) (2+3)	1,217	1,539	1,459	1,600	1,638	1,741
5	Surplus/ (Shortage) of Supply (MW) (4-1)	369	206	78	168	452	821
6	CO Compliance (%) Surplus / (Shortage)	44%	15%	6%	12%	38%	89%

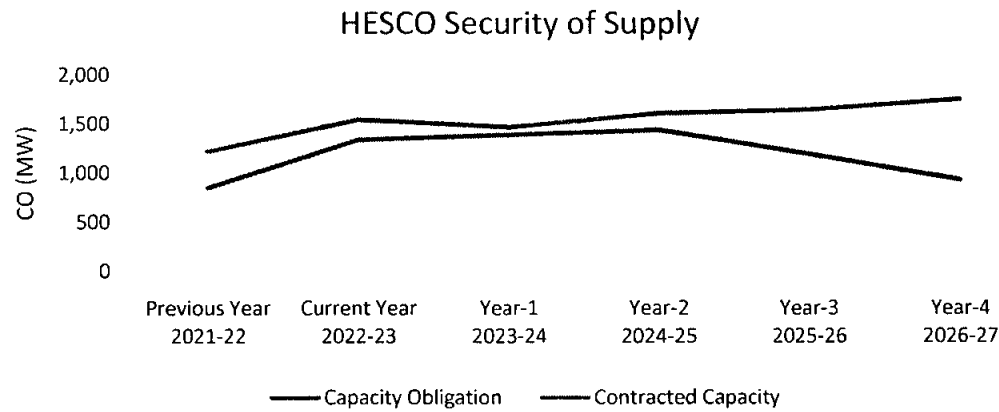


Figure 4-7 HESCO Security of Supply

4.1.8. QESCO:

Table 4-8 QESCO's security of supply position

QESCO							
	Supply Demand	Actual		Forecasted			
		Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27
1	Capacity Obligations (MW)	835	1,276	1,317	1,363	1,127	881
2	Contracted Commissioned (MW)	1,428	1,595	1,533	1,533	1,532	1,531
3	Committed/ Contracted (MW)	0	210	179	344	390	512
4	Total Credited Capacity (MW) (2+3)	1,428	1,805	1,712	1,877	1,922	2,043
5	Surplus/ (Shortage) of Supply (MW) (4-1)	593	530	395	515	795	1,163
6	CO Compliance (%) Surplus / (Shortage)	71%	42%	30%	38%	71%	132%

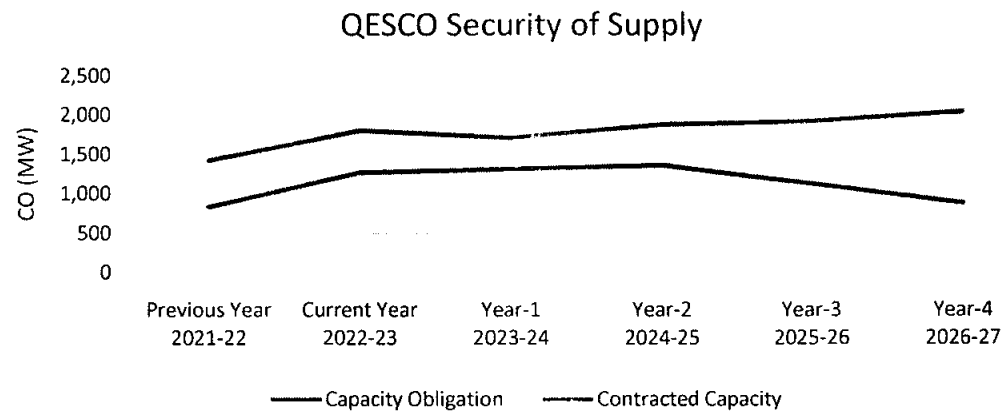


Figure 4-8 QESCO Security of Supply

4.1.9. TESCO:

Table 4-9 TESCO's security of supply position

TESCO							
	Supply Demand	Actual		Forecasted			
		Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27
1	Capacity Obligations (MW)	0	590	615	643	539	424
2	Contracted Commissioned (MW)	0	494	475	475	474	474
3	Committed/ Contracted (MW)	0	65	55	107	121	159
4	Total Credited Capacity (MW) (2+3)	0	559	530	581	595	633
5	Surplus/ (Shortage) of Supply (MW) (4-1)	0	-31	-85	-62	56	209
6	CO Compliance (%) Surplus / (Shortage)	0%	-5%	-14%	-10%	10%	49%

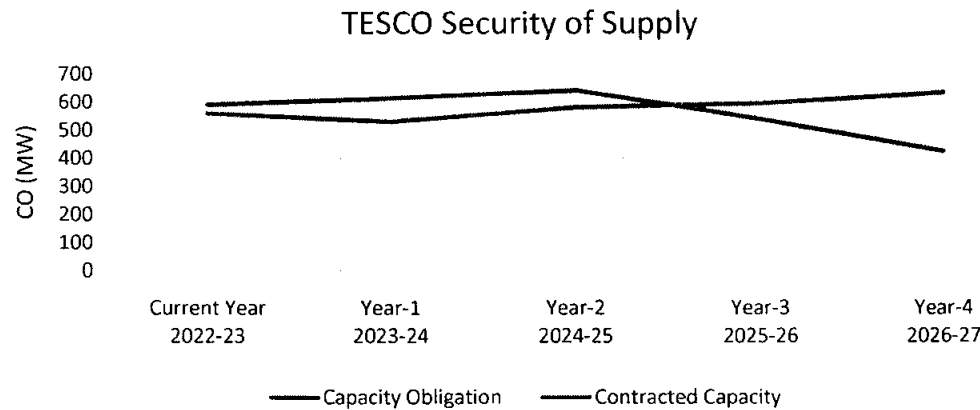


Figure 4-9 TESCO Security of Supply

4.1.10. SEPCO:

Table 4-10 SESPO's security of supply position

SEPCO							
Supply Demand	Actual		Forecasted				
	Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27	
1 Capacity Obligations (MW)	690	1,133	1,150	1,167	947	721	
2 Contracted Commissioned (MW)	948	1,059	1,018	1,017	1,017	1,016	
3 Committed/ Contracted (MW)	0	140	119	229	259	340	
4 Total Credited Capacity (MW) (2+3)	948	1,198	1,136	1,246	1,276	1,356	
5 Surplus/ (Shortage) of Supply (MW) (4-1)	258	65	-14	79	328	635	
6 CO Compliance (%) Surplus / (Shortage)	37%	6%	-1%	7%	35%	88%	

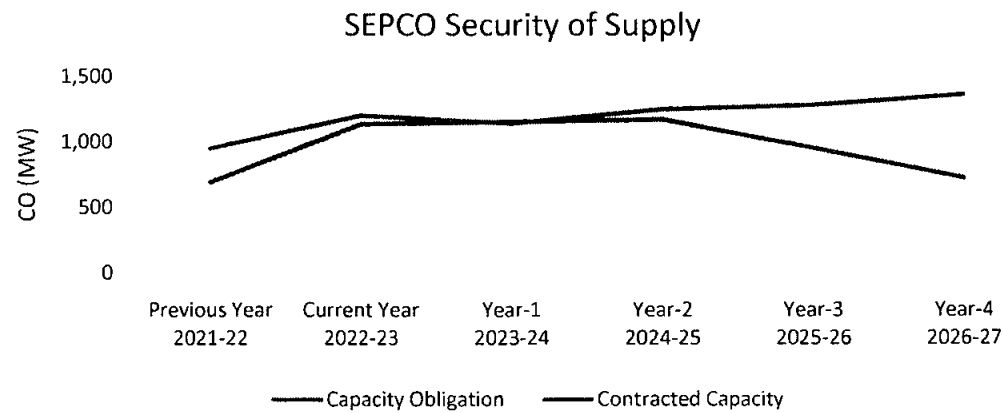


Figure 4-10 SEPCO Security of Supply

4.1.11. Total:

Table 4-11 XW-DISCOs cumulative security of supply position

		Total					
Supply Demand		Actual		Forecasted			
		Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27
1	Capacity Obligations (MW)	21,252	28,827	30,298	31,707	26,524	20,811
2	Contracted Commissioned (MW)	25,409	28,379	27,281	27,271	27,258	27,240
3	Committed/ Contracted (MW)	0	3,742	3,182	6,127	6,939	9,113
4	Total Credited Capacity (MW) (2+3)	25,409	32,121	30,463	33,398	34,197	36,352
5	Surplus/ (Shortage) of Supply (MW) (4-1)	4,157	3,294	165	1,691	7,673	15,541
6	CO Compliance (%) Surplus / (Shortage)	20%	11%	1%	5%	29%	75%

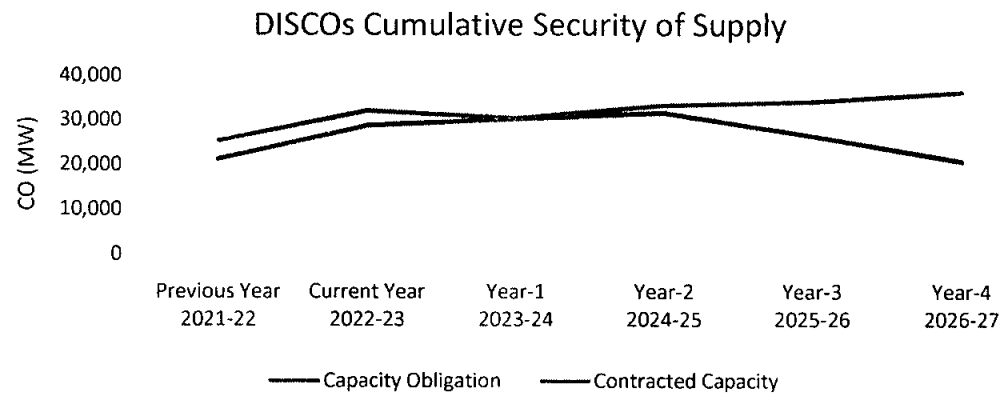


Figure 4-11 XW-DISCOs cumulative Security of Supply

5. POWER PROCUREMENT

DISCOs, in the role of Supplier of Last Resort (SOLR), are required to ensure security of supply for their regulated consumers by planning in advance and securing adequately sufficient capacity to meet the demand of their consumers. Any future power procurement is strictly planned in accordance with consumer demand and any difference between supply and demand, to ensure economical investment in the best interest of consumers.

5.1. Power Procurement Requirement:

Allocation of Future Capacity Procurement is made on pro-rata basis as per capacity requirements of all DISCOs, whereas, in years where all DISCOs are compliant, committed projects are allocated based on commercial allocation factors as provided in 1.2.1. above. Each XW-DISCO has forecasted occurrence and growth of Net-Metering capacity in respective Service Territories during planned future years, however, the approved IGCEP 2022 takes the net-metering arrangement as committed source of supply at 370 MW during each year. Accordingly, the said 370 MW Net-Metering capacity provided in IGCEP is considered as Solar DGs.

5.1.1. Power Procurement to meet Capacity Obligation:

Table 5-1DISCO's power procurement requirement for 2022-23

Year 2022-2023							
Sr No.	Generation Technology	Mode of Procurement	Installed Capacity (MW)	Firm Capacity (MW)	Cumulative Firm Capacity (MW)	Allocation to SoLRwrt to Additional Capacity Requirements	
1	Solar	Committed/ Direct Contracting	370	81	81	IESCO	5
						PESCO	7
						FESCO	7
						LESCO	11
						GEPCO	5
						MEPCO	9
						HESCO	2
						QESCO	3
						TESCO	32
						SEPCO	2

Table 5-2 DISCO's power procurement requirement for 2023-24

Year 2023-2024							
Sr No.	Generation Technology	Mode of Procurement	Installed Capacity (MW)	Firm Capacity (MW)	Cumulative Firm Capacity (MW)	Allocation to SoLRwrt to Additional Capacity Requirements	
1	Hydro	Committed/ Direct Contracting	116	98	259	IESCO	0
						PESCO	0
2	Solar	Committed/ Direct Contracting	620	136		FESCO	49
						LESCO	24
3	Wind	Committed/ Direct Contracting	50	15		GEPCO	46
						MEPCO	127
4	SPP	Committed/ Direct Contracting	10	9		HESCO	0
						QESCO	0
						TESCO	13
						SEPCO	0

Table 5-3 DISCO's power procurement requirement for 2024-25

Year 2024-2025							
Sr No.	Generation Technology	Mode of Procurement	Installed Capacity (MW)	Firm Capacity (MW)	Cumulative Firm Capacity (MW)	Allocation to SoLRwrt to Additional Capacity Requirements	
1	Hydel	Committed/ Direct Contracting	84	71	153	IESCO	16
						PESCO	20
						FESCO	20
2	Solar	Committed/ Direct Contracting	370	81		LESCO	32
						GEPSCO	15
						MEPCO	26
						HESCO	7
						QESCO	9
						TESCO	3
						SEPCO	6

Table 5-4 DISCO's power procurement requirement for 2025-26

Year 2025-2026							
Sr No.	Generation Technology	Mode of Procurement	Installed Capacity (MW)	Firm Capacity (MW)	Cumulative Firm Capacity (MW)	Allocation to SoLRwrt to Additional Capacity Requirements	
1	Hydel	Committed/ Direct Contracting	11	9	90	IESCO	9
						PESCO	12
FESCO	12						
LESCO	19						
GEPCO	9						
MEPCO	15						
HESCO	4						
QESCO	5						
TESCO	2						
SEPCO	3						
2	Solar	Committed/ Direct Contracting	370	81			

Table 5-5 DISCO's power procurement requirement for 2026-27

Year 2026-2027							
Sr. No.	Generation Technology	Mode of Procurement	Installed Capacity (MW)	Firm Capacity (MW)	Cumulative Firm Capacity (MW)	Allocation to SoLRwrt to Additional Capacity Requirements	
1	Solar	Committed/ Direct Contracting	370	81	81	IESCO	8
						PESCO	10
						FESCO	11
						LESCO	17
						GESCO	8
						MEPCO	14
						HESCO	4
						QESCO	5
						TESCO	1
						SEPCO	3

Complete list of Committed Projects for future Procurement is provided at Annex-III.

5.1.2. Power Procurement for Cost Reduction:

Under directions from the Government of Pakistan, Ministry of Energy, the XW-DISCOs have undertaken initiative for Solarization of selected 11 kV feeders. This initiative is aimed at displacement of costly imported fuel-based power generation with the cheap and environment friendly electricity generation based on solar parks of different (1-4 MW) capacities. For this purpose, the XW-DISCOs have already submitted requests for approval of RFP and determination of benchmark tariff with NEPRA.

Table 5-6 DISCO's power procurement requirement (cost reduction) for 2022-23

Year 2022-2023									
Sr No.	Generation Technology	Mode of Procurement	Installed Capacity (MW)	Firm Capacity (MW)	Cumulative Firm Capacity (MW)	Allocation to SoLRwrt to Additional Capacity Requirements			
1	Solar DG	Competitive Bidding	0	0	0	IESCO	0		
						PESCO	0		
						FESCO	0		
2	Solar Utility	Competitive Bidding	0	0		0	LESCO	0	
							GEPCO	0	
							MEPCO	0	
3	Wind	Competitive Bidding	0	0			0	HESCO	0
								QESCO	0
								TESCO	0
					SEPCO			0	

Table 5-7 DISCO's power procurement requirement (cost reduction) for 2023-24

Year 2023-2024							
Sr No.	Generation Technology	Mode of Procurement	Installed Capacity (MW)	Firm Capacity (MW)	Cumulative Firm Capacity (MW)	Allocation to SoLRwrt to Additional Capacity Requirements	
1	Solar DG	Competitive Bidding	1,224	269	275	IESCO	3
						PESCO	21
						FESCO	54
						LESCO	66
						GEPSCO	49
						MEPCO	50
						HESCO	19
						QESCO	1
						TESCO	0
						SEPCO	12
2	Bagasse	Committed/ Direct Contracting [HESCO]	6.5	6			

The additional capacities mentioned against each DISCO are based on the projects at individual XW-DISCO.

Table 5-8 DISCO's power procurement requirement (cost reduction) for 2024-25

Year 2024-2025									
Sr No.	Generation Technology	Mode of Procurement	Installed Capacity (MW)	Firm Capacity (MW)	Cumulative Firm Capacity (MW)	Allocation to SoLRwrt to Additional Capacity Requirements			
1	Solar DG	Competitive Bidding	0	0	0	IESCO	0		
						PESCO	0		
						FESCO	0		
2	Solar Utility	Competitive Bidding	0	0		0	LESCO	0	
							GEPCO	0	
							MEPCO	0	
3	Wind	Competitive Bidding	0	0			0	HESCO	0
								QESCO	0
								TESCO	0
								SEPCO	0

Table 5-9 DISCO's power procurement requirement (cost reduction) for 2025-26

Year 2025-2026									
Sr No.	Generation Technology	Mode of Procurement	Installed Capacity (MW)	Firm Capacity (MW)	Cumulative Firm Capacity (MW)	Allocation to SoLRwrt to Additional Capacity Requirements			
1	Solar DG	Competitive Bidding	0	0	0	IESCO	0		
						PESCO	0		
						FESCO	0		
2	Solar Utility	Competitive Bidding	0	0		0	LESCO	0	
							GEPCO	0	
							MEPCO	0	
3	Wind	Competitive Bidding	0	0			0	HESCO	0
								QESCO	0
								TESCO	0
								SEPCO	0

Table 5-10 DISCO's power procurement requirement (cost reduction) for 2026-27

Year 2026-2027									
Sr No.	Generation Technology	Mode of Procurement	Installed Capacity (MW)	Firm Capacity (MW)	Cumulative Firm Capacity (MW)	Allocation to SoLRwrt to Additional Capacity Requirements			
1	Solar DG	Competitive Bidding	0	0	0	IESCO	0		
						PESCO	0		
						FESCO	0		
2	Solar Utility	Competitive Bidding	0	0		0	LESCO	0	
							GEPCO	0	
							MEPCO	0	
3	Wind	Competitive Bidding	0	0			0	HESCO	0
								QESCO	0
								TESCO	0
								SEPCO	0

5.1.3. Power Procurement for Removal of Constraints:

Table 5-11 DISCO's power procurement requirement (Constraint Removal) for 2022-23

Year 2022-2023							
Sr No.	Generation Technology	Mode of Procurement	Installed Capacity (MW)	Firm Capacity (MW)	Cumulative Firm Capacity (MW)	Allocation to SoLRwrt to Additional Capacity Requirements	
1	RLNG (KAPCO)	Contract Extension	1,300	500	500	IESCO	51
						PESCO	64
						FESCO	65
						LESCO	106
						GEPSCO	49
						MEPCO	85
						HESCO	24
						QESCO	28
						TESCO	9
						SEPCO	19

DISCO-wise allocation of firm capacity is based on prorated allocation against the shortage of supply vis-à-vis the determined capacity obligation during the year 2022-23.

Table 5-12 DISCO's power procurement requirement (Constraint Removal) for 2023-24

Year 2023-2024							
Sr No.	Generation Technology	Mode of Procurement	Installed Capacity (MW)	Firm Capacity (MW)	Cumulative Firm Capacity (MW)	Allocation to SoLRwrt to Additional Capacity Requirements	
1	RLNG (KAPCO)	Contract Extension	1,300	500	500	IESCO	0
						PESCO	0
						FESCO	95
						LESCO	46
						GEPSCO	89
						MEPCO	245
						HESCO	0
						QESCO	0
						TESCO	25
						SEPCO	0

DISCO-wise allocation of firm capacity is based on prorated allocation against the shortage of supply vis-à-vis the determined capacity obligation during the year 2023-24.

Table 5-13 DISCO's power procurement requirement (Constraint Removal) for 2024-25

Year 2024-2025							
Sr No.	Generation Technology	Mode of Procurement	Installed Capacity (MW)	Firm Capacity (MW)	Cumulative Firm Capacity (MW)	Allocation to SoLRwrt to Additional Capacity Requirements	
1	RLNG (KAPCO)	Contract Extension	1,300	500	500	IESCO	51
						PESCO	64
						FESCO	65
						LESCO	106
						GEPSCO	49
						MEPCO	85
						HESCO	24
						QESCO	28
						TESCO	9
						SEPCO	19

DISCO-wise allocation of firm capacity is based on Commercial Allocation Factors as per MCC during the year 2024-25.

Table 5-14 DISCO's power procurement requirement (Constraint Removal) for 2025-26

Year 2025-2026							
Sr No.	Generation Technology	Mode of Procurement	Installed Capacity (MW)	Firm Capacity (MW)	Cumulative Firm Capacity (MW)	Allocation to SoLRwrt to Additional Capacity Requirements	
1	RLNG (KAPCO)	Contract Extension	1,300	500	500	IESCO	51
						PESCO	64
						FESCO	65
						LESCO	106
						GEPSCO	49
						MEPCO	85
						HESCO	24
						QESCO	28
						TESCO	9
						SEPCO	19

DISCO-wise allocation of firm capacity is based on Commercial Allocation Factors as per MCC during the year 2025-26.

Table 5-15 DISCO's power procurement requirement (Constraint Removal) for 2026-27

Year 2026-2027							
Sr No.	Generation Technology	Mode of Procurement	Installed Capacity (MW)	Firm Capacity (MW)	Cumulative Firm Capacity (MW)	Allocation to SoLRwrt to Additional Capacity Requirements	
1	Solar DG	Competitive Bidding	0	0	0	IESCO	0
						PESCO	0
						FESCO	0
2	Solar Utility	Competitive Bidding	0	0		LESCO	0
						GEPSCO	0
						MEPCO	0
3	RLNG (KAPCO)	Contract Extension	0	0		HESCO	0
						QESCO	0
						TESCO	0
						SEPCO	0

Allocation of KAPCO (for Constraint Removal) is made each year on pro-rata basis as per capacity requirement of each DISCO in respective year. Whereas, for years where all DISCOs are compliant, allocation is based upon commercial allocation factors as provided in 1.2.1. above.

5.2. Capacity Obligation Compliance Including Proposed Procurements:

5.2.1. IESCO:

Table 5-16 IESCO's compliance with CO including proposed procurement

IESCO							
	Supply Demand	Actual		Forecasted			
		Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27
1	Capacity Obligations (MW)	2,256	2,834	2,956	3,124	2,628	2,082
2	Contracted Commissioned (MW)	2,579	2,881	2,769	2,768	2,767	2,765
3	Committed/ Contracted (MW)	0	380	323	622	704	925
4	Uncontracted (MW) ((2+3)-1)	323	427	137	266	843	1,608
5	Future Procurement (MW)	0	5	5	21	30	39
6	Cost Reduction Projects (MW)	0	0	3	3	3	3
7	Constraints Removal (MW)	0	51	0	51	51	0
8	Total Credited Capacity (MW) (2+3+5+6+7)	2,579	3,317	3,101	3,465	3,556	3,724
9	Surplus/ (Shortage) of Supply (MW) (8-1)	323	483	145	342	927	1,650
10	CO Compliance (%) – Surplus / (Shortage)	14%	17%	5%	11%	35%	79%

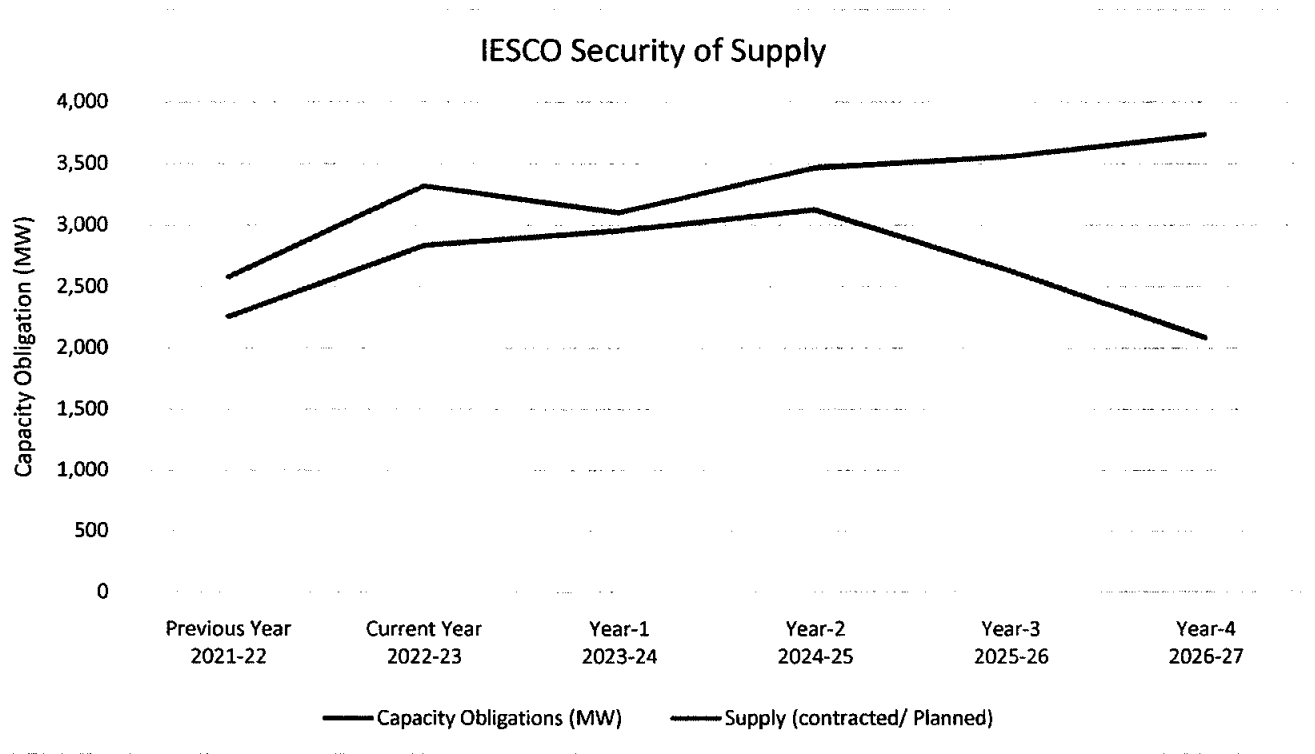


Figure 5-1 IESCOs Security of Supply including Proposed Procurement

5.2.2. PESCO:

Table 5-17 PESCO's compliance with CO including proposed procurement

PESCO							
	Supply Demand	Actual		Forecasted			
		Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27
1	Capacity Obligations (MW)	2,736	2,854	3,019	3,163	2,647	2,050
2	Contracted Commissioned (MW)	3,718	3,658	3,517	3,516	3,514	3,512
3	Committed/ Contracted (MW)	0	482	410	790	894	1,175
4	Uncontracted (MW) ((2+3)-1)	982	1,287	908	1,142	1,761	2,636
5	Future Procurement (MW)	0	7	7	27	38	49
6	Cost Reduction Projects (MW)	0	0	21	21	21	21
7	Constraints Removal (MW)	0	64	0	64	64	0
8	Total Credited Capacity (MW) (2+3+5+6+7)	3,718	4,211	3,955	4,417	4,532	4,745
9	Surplus/ (Shortage) of Supply (MW) (8-1)	982	1,357	936	1,254	1,885	2,706
10	CO Compliance (%) – Surplus / (Shortage)	36%	48%	31%	40%	71%	132%

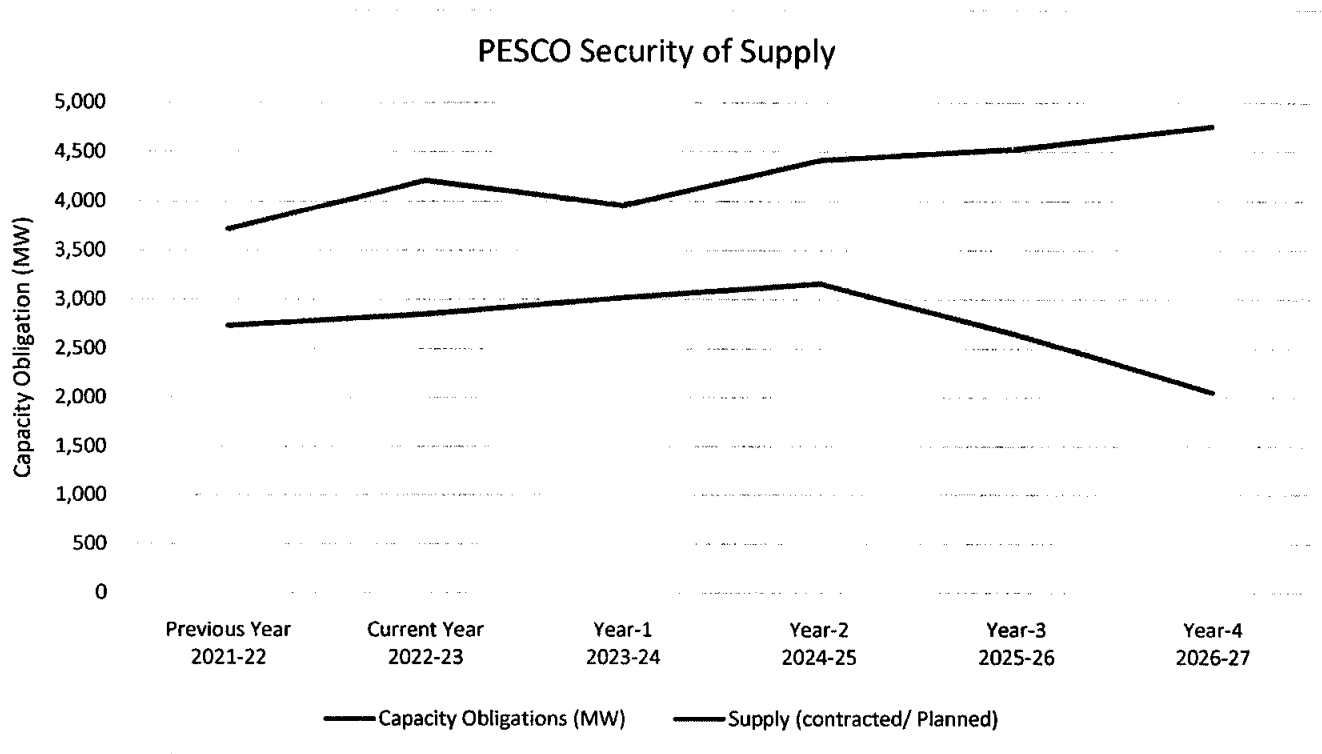


Figure 5-2PESCOs Security of Supply including Proposed Procurement

5.2.3. FESCO:

Table 5-18 FESCO's compliance with CO including proposed procurement

FESCO							
	Supply Demand	Actual		Forecasted			
		Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27
1	Capacity Obligations (MW)	2,969	3,968	4,249	4,456	3,729	2,943
2	Contracted Commissioned (MW)	3,326	3,715	3,571	3,570	3,568	3,566
3	Committed/ Contracted (MW)	0	490	417	802	908	1,193
4	Uncontracted (MW) ((2+3)-1)	357	237	-261	-84	748	1,816
5	Future Procurement (MW)	0	7	56	76	87	98
6	Cost Reduction Projects (MW)	0	0	54	54	54	54
7	Constraints Removal (MW)	0	65	95	65	65	0
8	Total Credited Capacity (MW) (2+3+5+6+7)	3,326	4,277	4,193	4,567	4,684	4,900
9	Surplus/ (Shortage) of Supply (MW) (8-1)	357	309	-57	111	954	1,968
10	CO Compliance (%) – Surplus / (Shortage)	12%	8%	-1%	2%	26%	67%

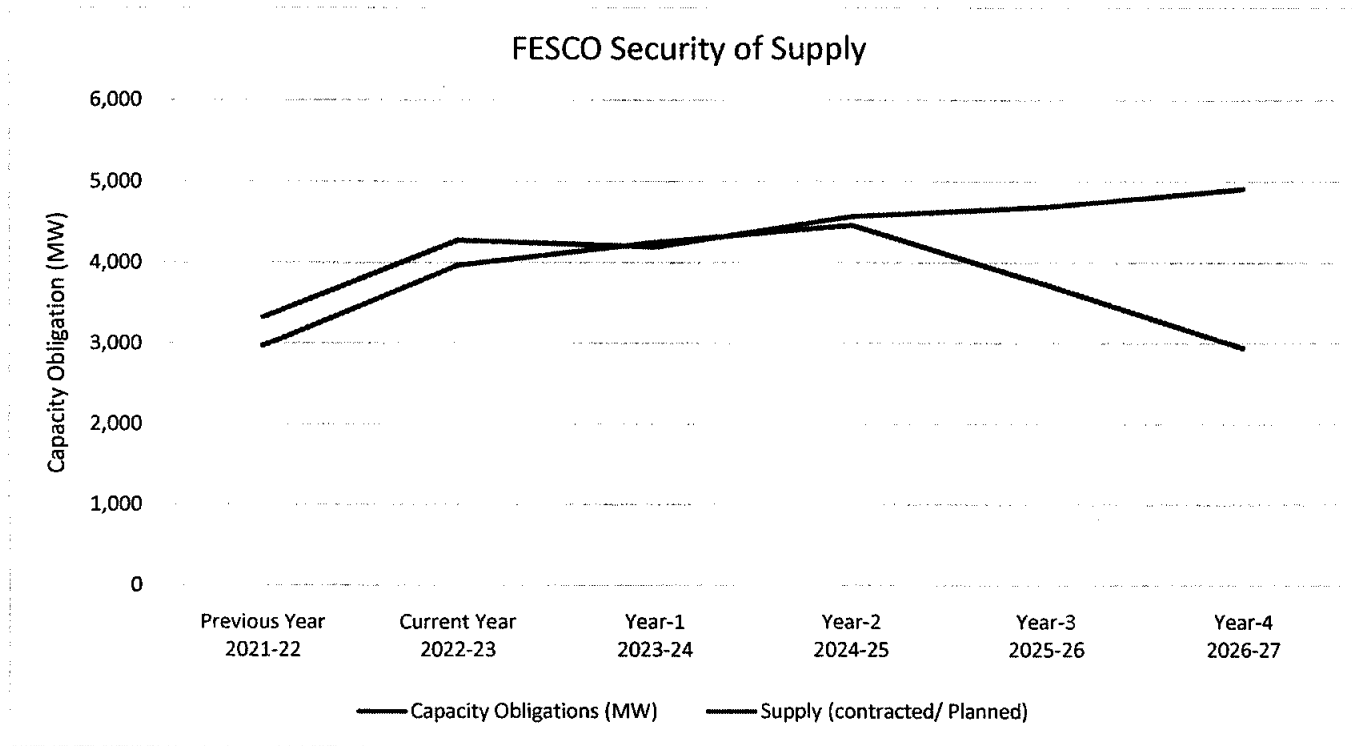


Figure 5-3 FESCOs Security of Supply including Proposed Procurement

5.2.4. LESCO:

Table 5-19 LESCO's compliance with CO including proposed procurement

LESCO							
	Supply Demand	Actual		Forecasted			
		Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27
1	Capacity Obligations (MW)	5,210	6,302	6,603	6,855	5,720	4,467
2	Contracted Commissioned (MW)	5,362	5,989	5,757	5,755	5,752	5,748
3	Committed/ Contracted (MW)	0	790	672	1,293	1,464	1,923
4	Uncontracted (MW) ((2+3)-1)	152	476	-174	193	1,496	3,204
5	Future Procurement (MW)	0	11	35	67	86	103
6	Cost Reduction Projects (MW)	0	0	66	66	66	66
7	Constraints Removal (MW)	0	106	46	106	106	0
8	Total Credited Capacity (MW) (2+3+5+6+7)	5,362	6,895	6,575	7,286	7,474	7,823
9	Surplus/ (Shortage) of Supply (MW) (8-1)	152	593	-28	431	1,753	3,373
10	CO Compliance (%) – Surplus / (Shortage)	3%	9%	0%	6%	31%	76%

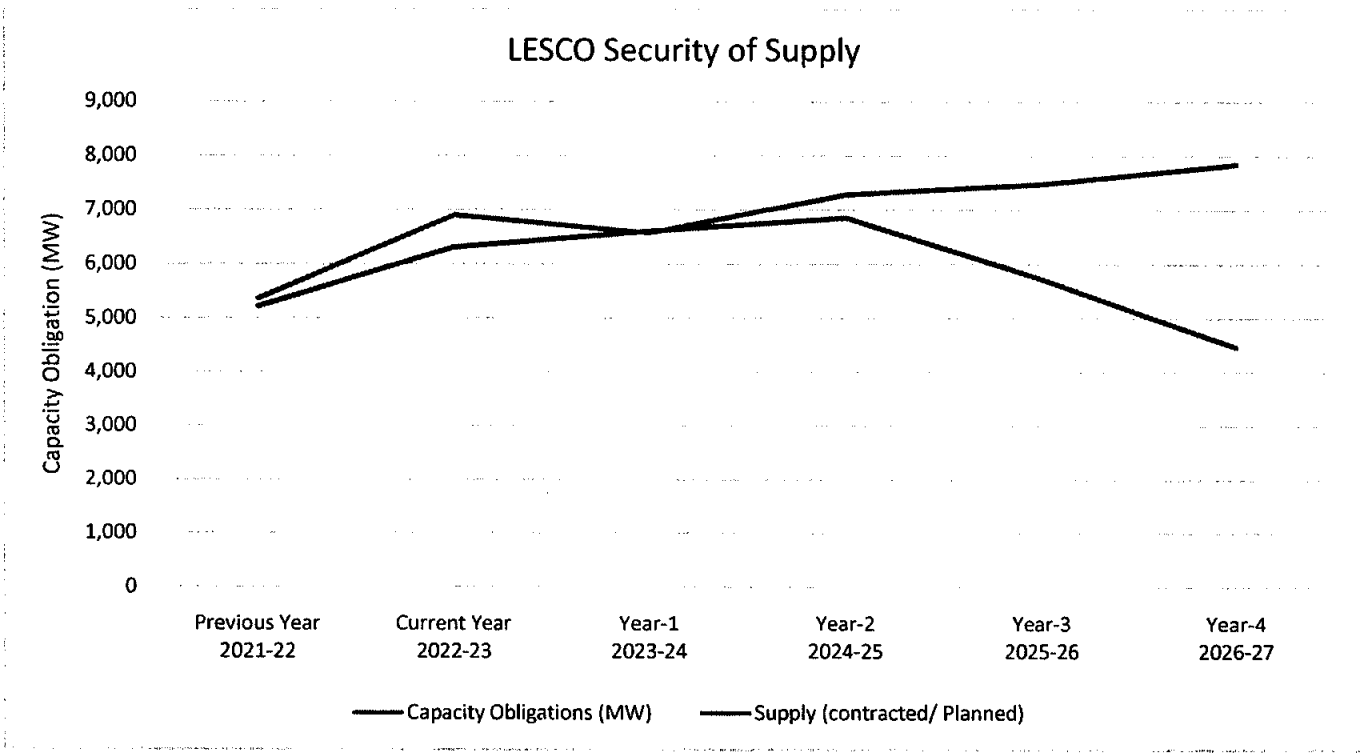


Figure 5-4 LESCOs Security of Supply including Proposed Procurement

5.2.5. GEPCO:

Table 5-20 GEPCO's compliance with CO including proposed procurement

GEPCO							
	Supply Demand	Actual		Forecasted			
		Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27
1	Capacity Obligations (MW)	2,198	3,106	3,235	3,393	2,840	2,230
2	Contracted Commissioned (MW)	2,496	2,787	2,679	2,678	2,677	2,675
3	Committed/ Contracted (MW)	0	368	313	602	681	895
4	Uncontracted (MW) ((2+3)-1)	298	49	-243	-113	519	1,340
5	Future Procurement (MW)	0	5	51	66	75	83
6	Cost Reduction Projects (MW)	0	0	49	49	49	49
7	Constraints Removal (MW)	0	49	89	49	49	0
8	Total Credited Capacity (MW) (2+3+5+6+7)	2,496	3,209	3,180	3,444	3,531	3,694
9	Surplus/ (Shortage) of Supply (MW) (8-1)	298	103	-54	51	691	1,463
10	CO Compliance (%) – Surplus / (Shortage)	14%	3%	-2%	2%	24%	66%

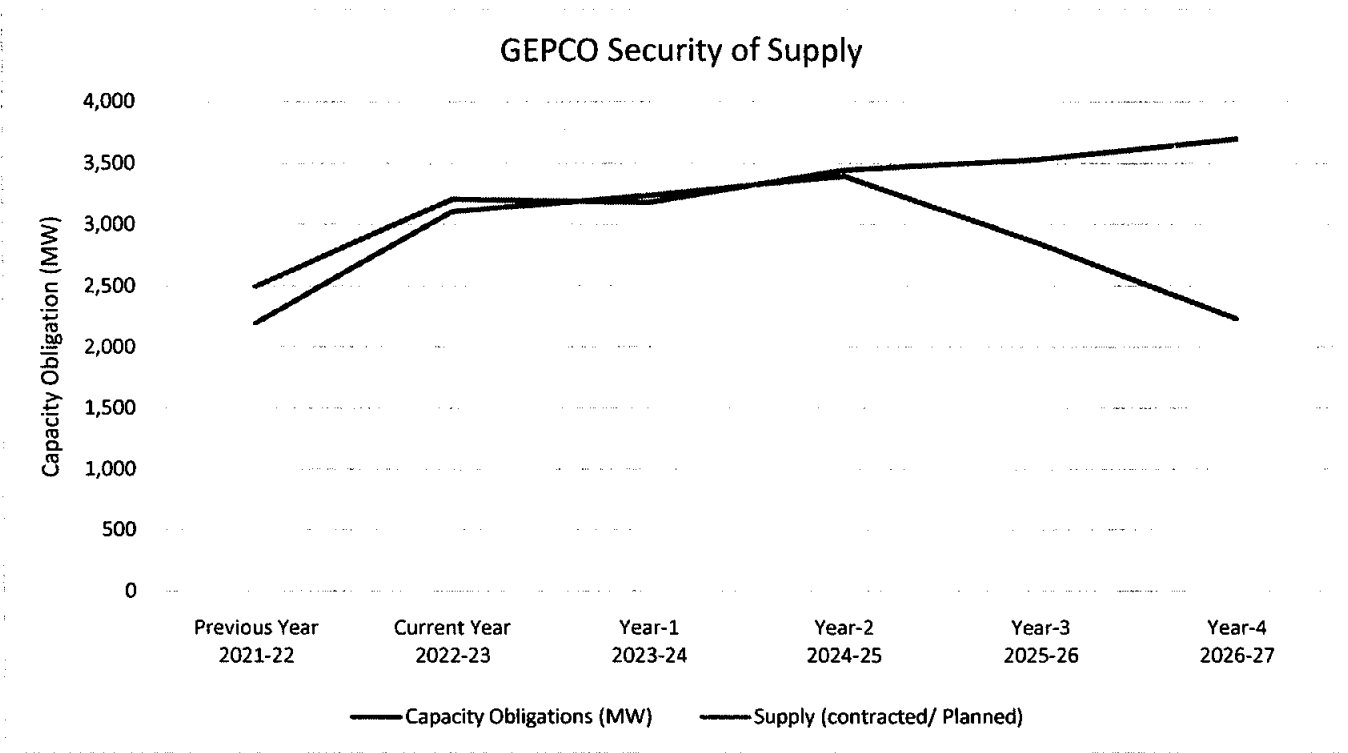


Figure 5-5 GEPSCO's Security of Supply including Proposed Procurement

5.2.6. MEPCO:

Table 5-21MEPCO's compliance with CO including proposed procurement

MEPCO							
	Supply Demand	Actual		Forecasted			
		Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27
1	Capacity Obligations (MW)	3,510	5,432	5,773	6,112	5,160	4,094
2	Contracted Commissioned (MW)	4,335	4,842	4,655	4,653	4,651	4,648
3	Committed/ Contracted (MW)	0	639	543	1,045	1,184	1,555
4	Uncontracted (MW) ((2+3)-1)	825	48	-576	-414	675	2,109
5	Future Procurement (MW)	0	9	136	162	177	191
6	Cost Reduction Projects (MW)	0	0	50	50	50	50
7	Constraints Removal (MW)	0	85	245	85	85	0
8	Total Credited Capacity (MW) (2+3+5+6+7)	4,335	5,574	5,628	5,995	6,147	6,429
9	Surplus/ (Shortage) of Supply (MW) (8-1)	825	142	-145	-117	987	2,349
10	CO Compliance (%) – Surplus / (Shortage)	24%	3%	-3%	-2%	19%	57%

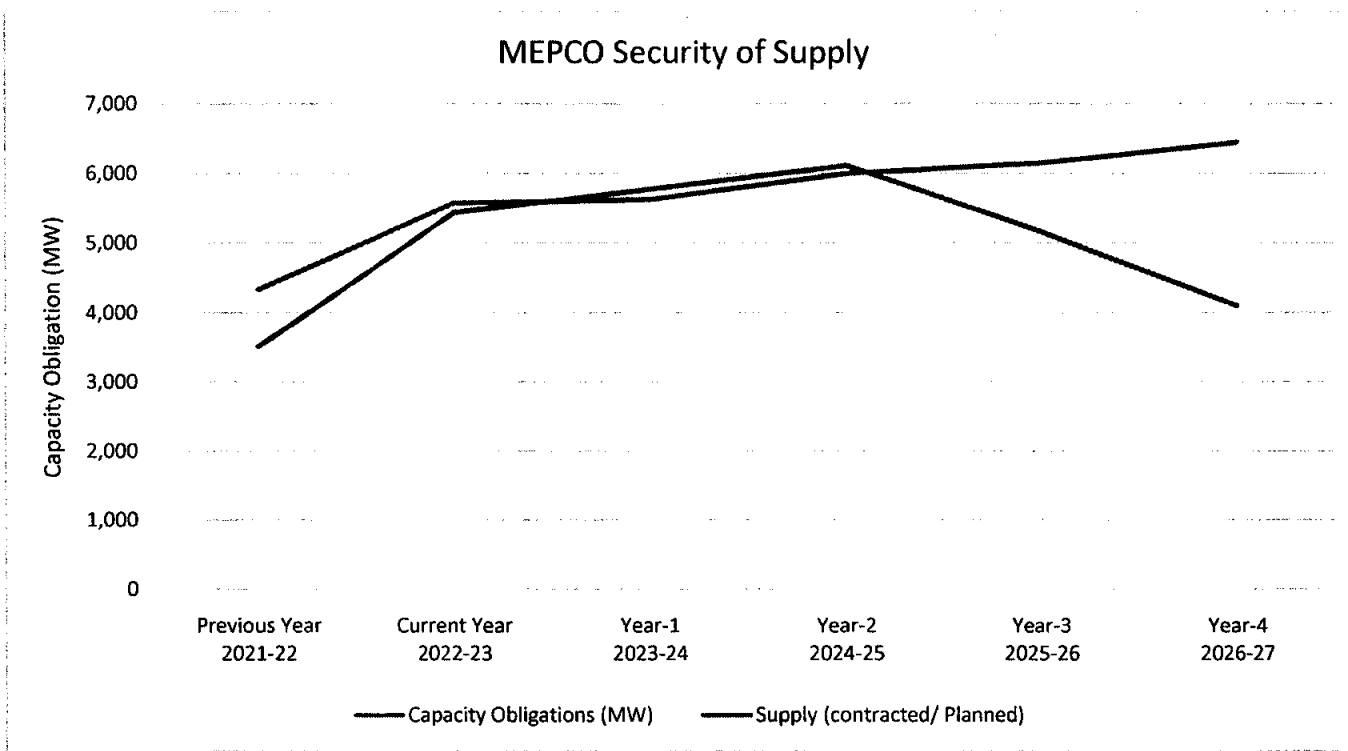


Figure 5-6 MEPCOs Security of Supply including Proposed Procurement

5.2.7. HESCO:

Table 5-22 HESCO's compliance with CO including proposed procurement

HESCO							
	Supply Demand	Actual		Forecasted			
		Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27
1	Capacity Obligations (MW)	848	1,333	1,382	1,431	1,186	921
2	Contracted Commissioned (MW)	1,217	1,359	1,307	1,306	1,306	1,305
3	Committed/ Contracted (MW)	0	179	152	294	332	437
4	Uncontracted (MW) ((2+3)-1)	369	206	78	168	452	821
5	Future Procurement (MW)	0	2	0	7	11	15
6	Cost Reduction Projects (MW)	0	0	19	19	19	19
7	Constraints Removal (MW)	0	24	0	24	24	0
8	Total Credited Capacity (MW) (2+3+5+6+7)	1,217	1,565	1,479	1,650	1,693	1,772
9	Surplus/ (Shortage) of Supply (MW) (8-1)	369	232	97	219	507	856
10	CO Compliance (%) – Surplus / (Shortage)	44%	17%	7%	15%	43%	93%

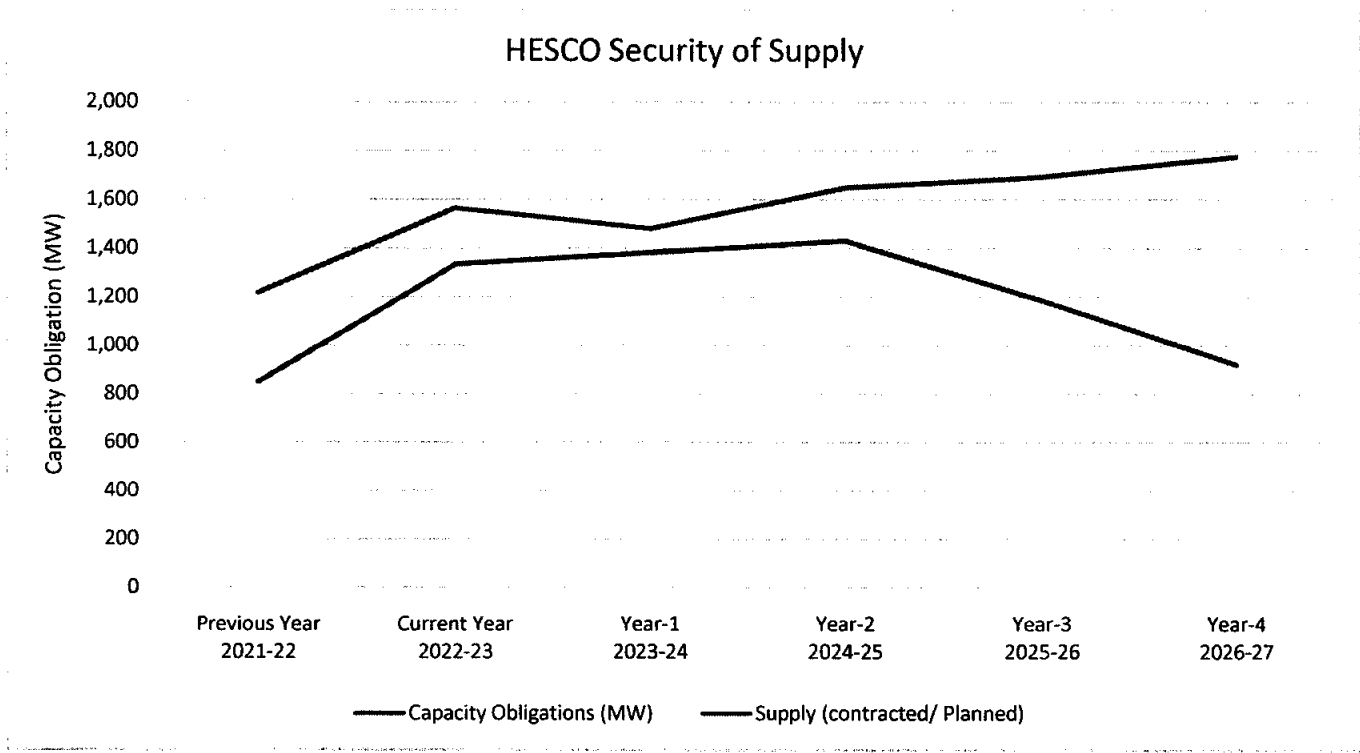


Figure 5-7 HESCOs Security of Supply including Proposed Procurement

5.2.8. QESCO:

Table 5-23 QESCO's compliance with CO including proposed procurement

QESCO							
	Supply Demand	Actual		Forecasted			
		Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27
1	Capacity Obligations (MW)	835	1,276	1,317	1,363	1,127	881
2	Contracted Commissioned (MW)	1,428	1,595	1,533	1,533	1,532	1,531
3	Committed/ Contracted (MW)	0	210	179	344	390	512
4	Uncontracted (MW) ((2+3)-1)	593	530	395	515	795	1,163
5	Future Procurement (MW)	0	3	3	12	17	21
6	Cost Reduction Projects (MW)	0	0	1	1	1	1
7	Constraints Removal (MW)	0	28	0	28	28	0
8	Total Credited Capacity (MW) (2+3+5+6+7)	1,428	1,836	1,716	1,918	1,968	2,061
9	Surplus/ (Shortage) of Supply (MW) (8-1)	593	561	399	556	841	1,185
10	CO Compliance (%) – Surplus / (Shortage)	71%	44%	30%	41%	75%	135%

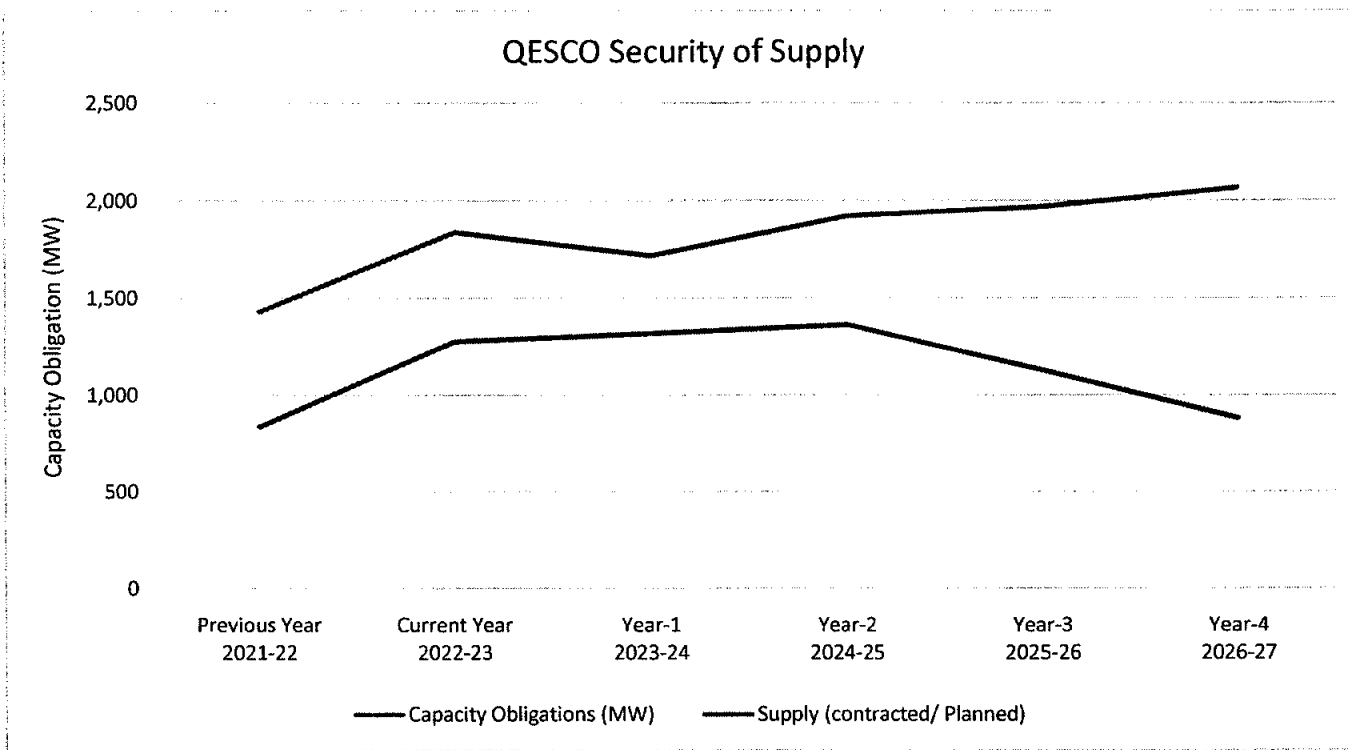


Figure 5-8 QESCOs Security of Supply including Proposed Procurement

5.2.9. TESCO:

Table 5-24 TESCO's compliance with CO including proposed procurement

TESCO							
Supply Demand	Actual		Forecasted				
	Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27	
1	Capacity Obligations (MW)	0	590	615	643	539	424
2	Contracted Commissioned (MW)	0	494	475	475	474	474
3	Committed/ Contracted (MW)	0	65	55	107	121	159
4	Uncontracted (MW) ((2+3)-1)	0	-31	-85	-62	56	209
5	Future Procurement (MW)	0	32	45	48	49	51
6	Cost Reduction Projects (MW)	0	0	0	0	0	0
7	Constraints Removal (MW)	0	9	25	9	9	0
8	Total Credited Capacity (MW) (2+3+5+6+7)	0	600	600	638	653	682
9	Surplus/ (Shortage) of Supply (MW) (8-1)	0	10	-15	-5	114	260
10	CO Compliance (%) – Surplus / (Shortage)	0%	2%	-2%	-1%	21%	61%

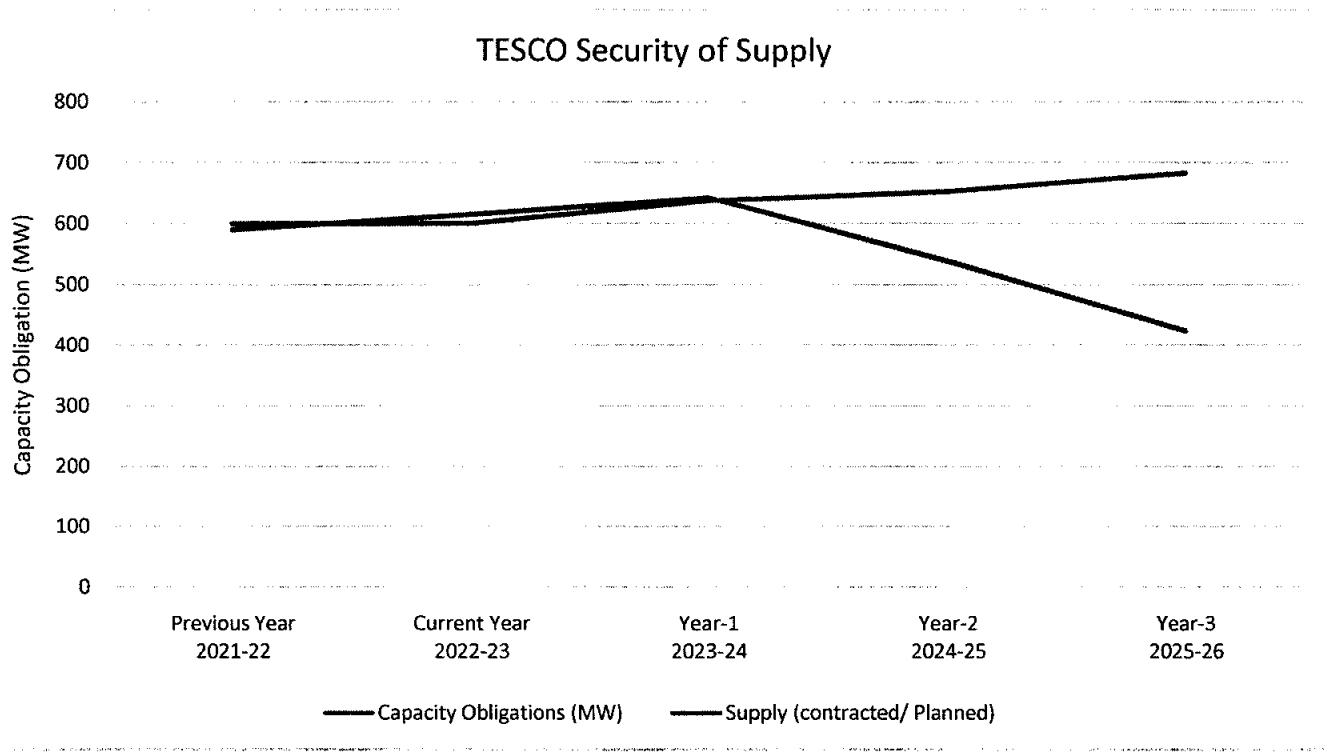


Figure 5-9 TESCOs Security of Supply including Proposed Procurement

5.2.10. SEPCO:

Table 5-25 SEPCO's compliance with CO including proposed procurement

SEPCO							
Supply Demand	Actual		Forecasted				
	Previous Year 2021-22	Current Year 2022-23	Year-1 2023-24	Year-2 2024-25	Year-3 2025-26	Year-4 2026-27	
1	Capacity Obligations (MW)	690	1,133	1,150	1,167	947	721
2	Contracted Commissioned (MW)	948	1,059	1,018	1,017	1,017	1,016
3	Committed/ Contracted (MW)	0	140	119	229	259	340
4	Uncontracted (MW) ((2+3)-1)	258	65	-14	79	328	635
5	Future Procurement (MW)	0	2	2	8	11	14
6	Cost Reduction Projects (MW)	0	0	12	12	12	12
7	Constraints Removal (MW)	0	19	0	19	19	0
8	Total Credited Capacity (MW) (2+3+5+6+7)	948	1,219	1,150	1,285	1,318	1,379
9	Surplus/ (Shortage) of Supply (MW) (8-1)	258	86	0	117	370	662
10	CO Compliance (%) – Surplus / (Shortage)	0%	8%	0%	10%	39%	92%

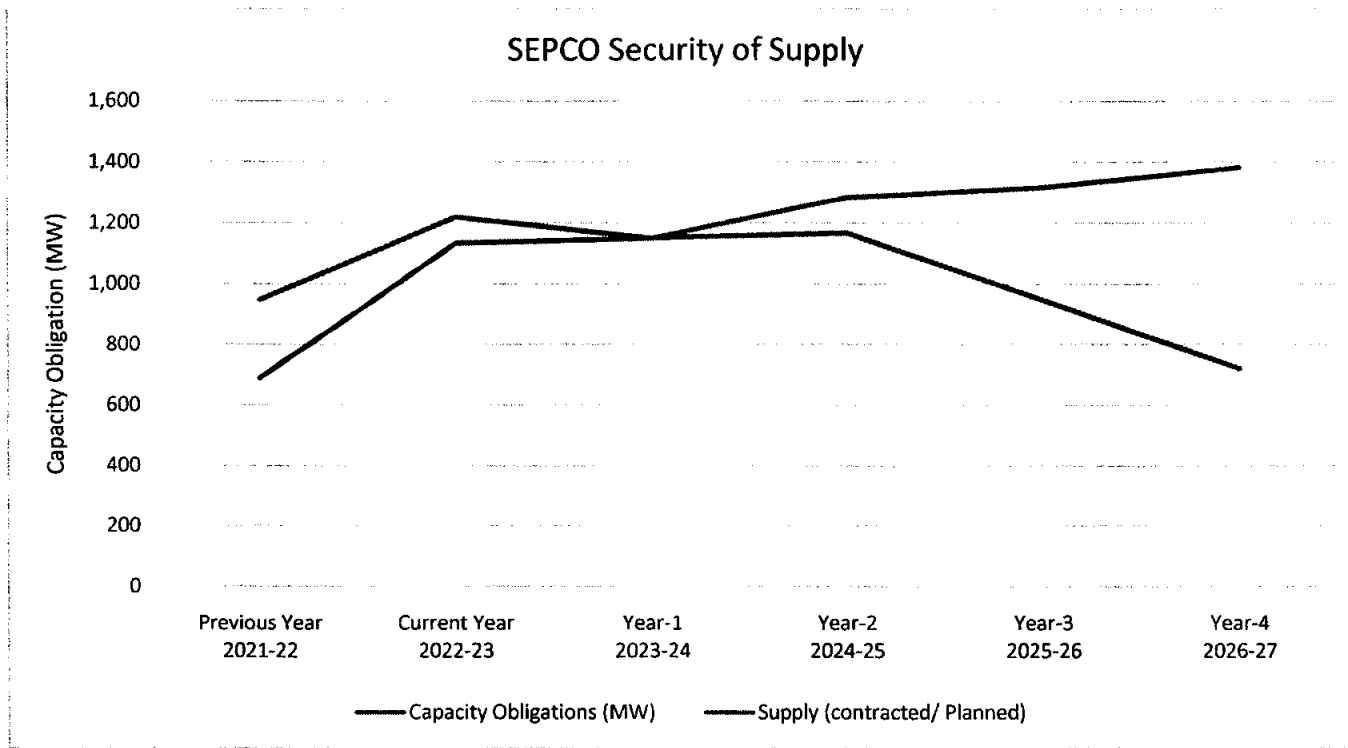
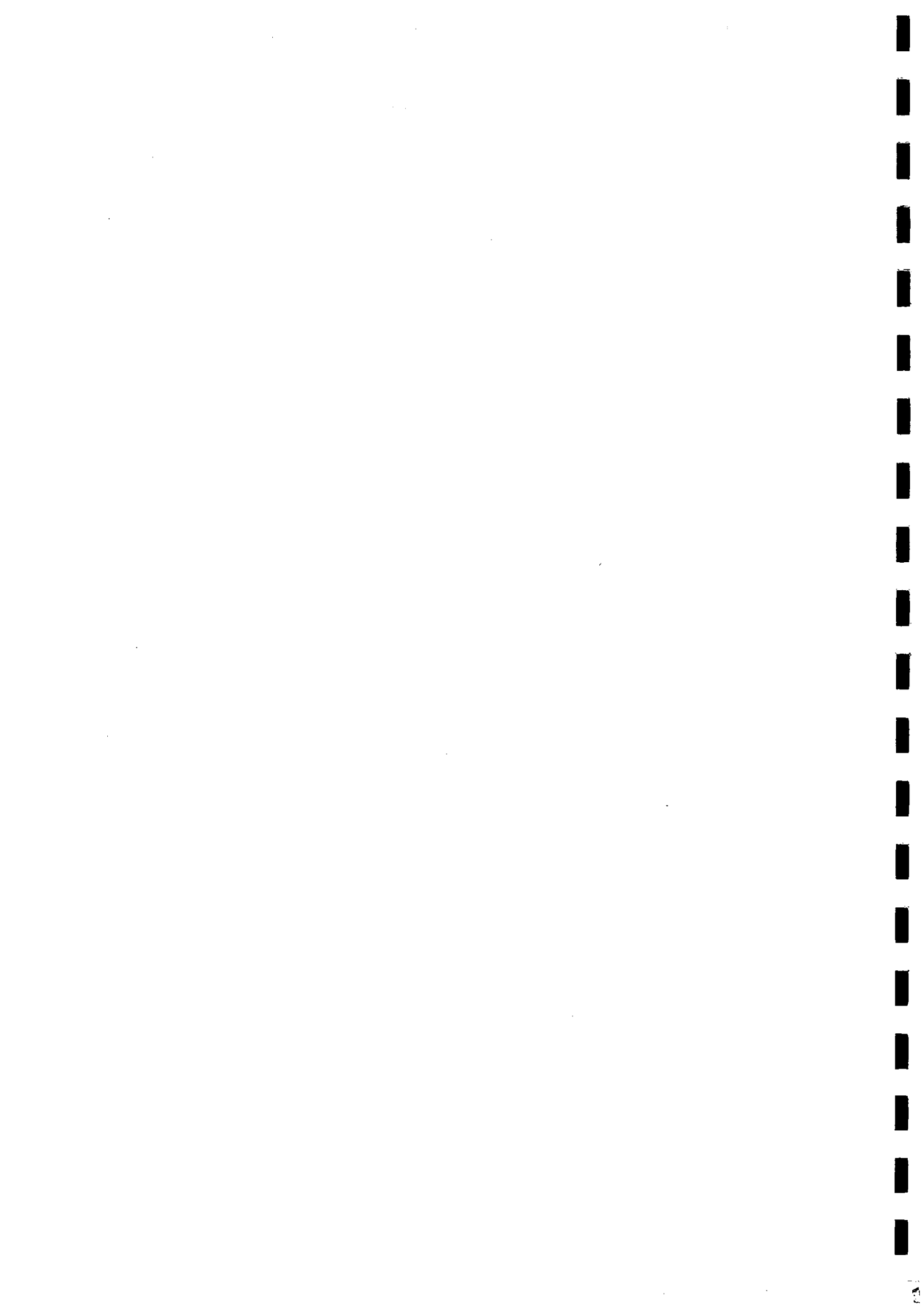


Figure 5-10 SEPCOs Security of Supply including Proposed Procurement

**ANNEX-IV: REPORT ON COMPLIANCE OF CAPACITY
OBLIGATION ISSUED BY CPPA (MO)**





Central Power Purchasing Agency Guarantee Limited
A Company of Government of Pakistan



CPPA-G/2023/MOD/0126-0128

March 14, 2023

TO,
DG MIRAD,
All DISCOs.

Subject: Issuance of revised Compliance with Capacity Obligations Report under the Trial Run Plan of CTBCM

Ref: CPPA-G/2023/MOD/0105-0116 dated 8th March, 2023

With reference to the above referred letter, CPPA-G issued the draft report on Compliance with Capacity Obligations under the trial run plan for feedback of the stakeholders. CPPA-G received comments from DISCOs especially GEPCO and also did consultative session on the feedback with DG MIRAD GEPCO. The report has been revised in light of such feedback and the updated results are presented in the attached report.

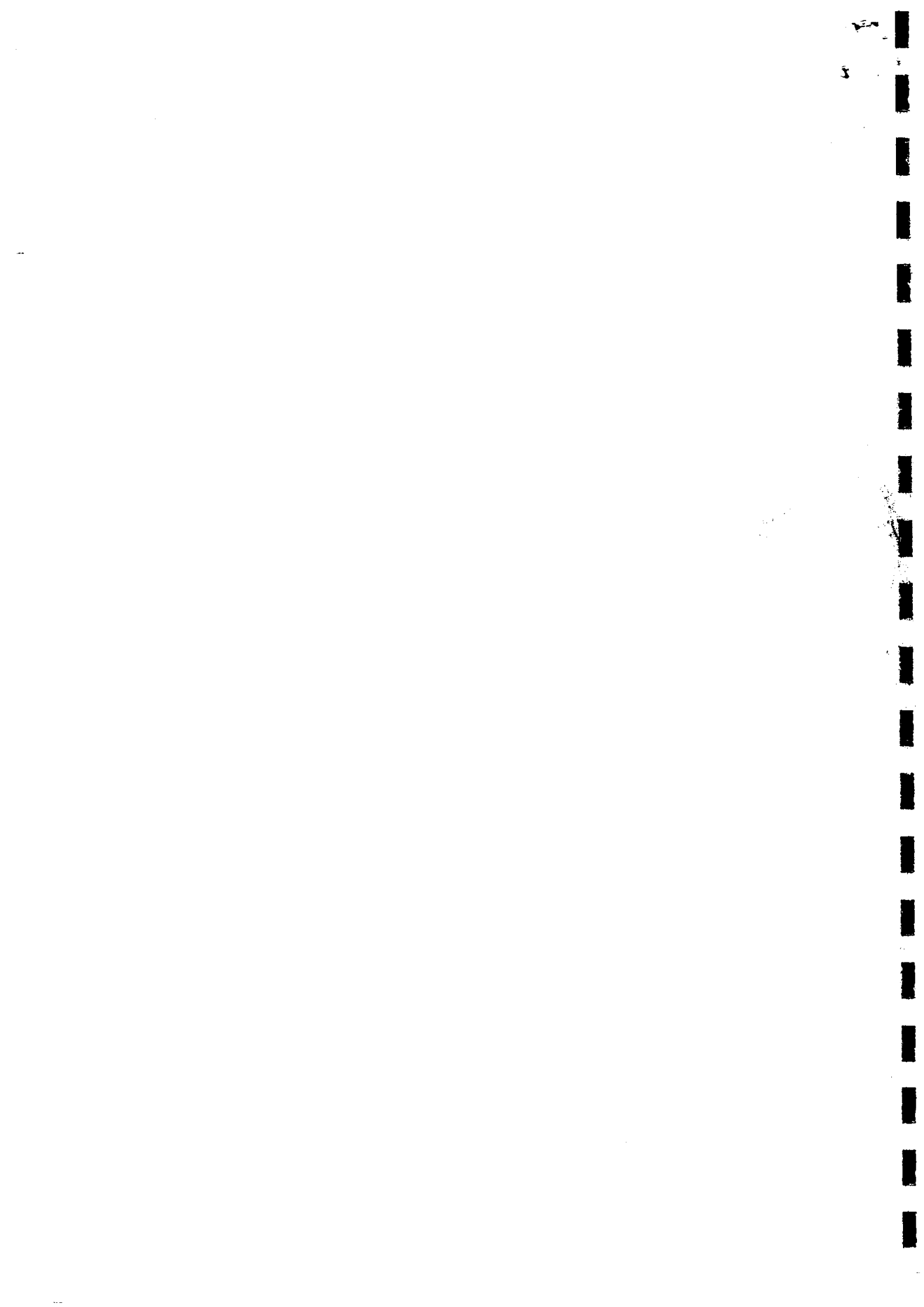
It is clarified that this report is circulated among the stakeholders for their comments and feedback. The results depicted in this report have no financial implications or other binding obligations on the stakeholders as it is issued for the trial purposes only. It is also clarified here that this report is prepared based on the provision given in the approved Commercial Code for the trial period. During the trial period, CPPA-G has undertaken a thorough trial run of all the provisions of the Commercial Code and has recommended certain amendments, in consultation with different stakeholders including DISCOs, to the Authority for approval. There are few amendments which may have impact on the results presented in this report and the impact of such amendments is described in the said report.

All DISCOs are requested to provide their feedback and comments within fourteen (14) days of the receipt of this report so that we are able to issue the final report on Compliance with Capacity Obligations.

Omer Haroon Malik
Head Market (O&D), CPPA-G

CC to:

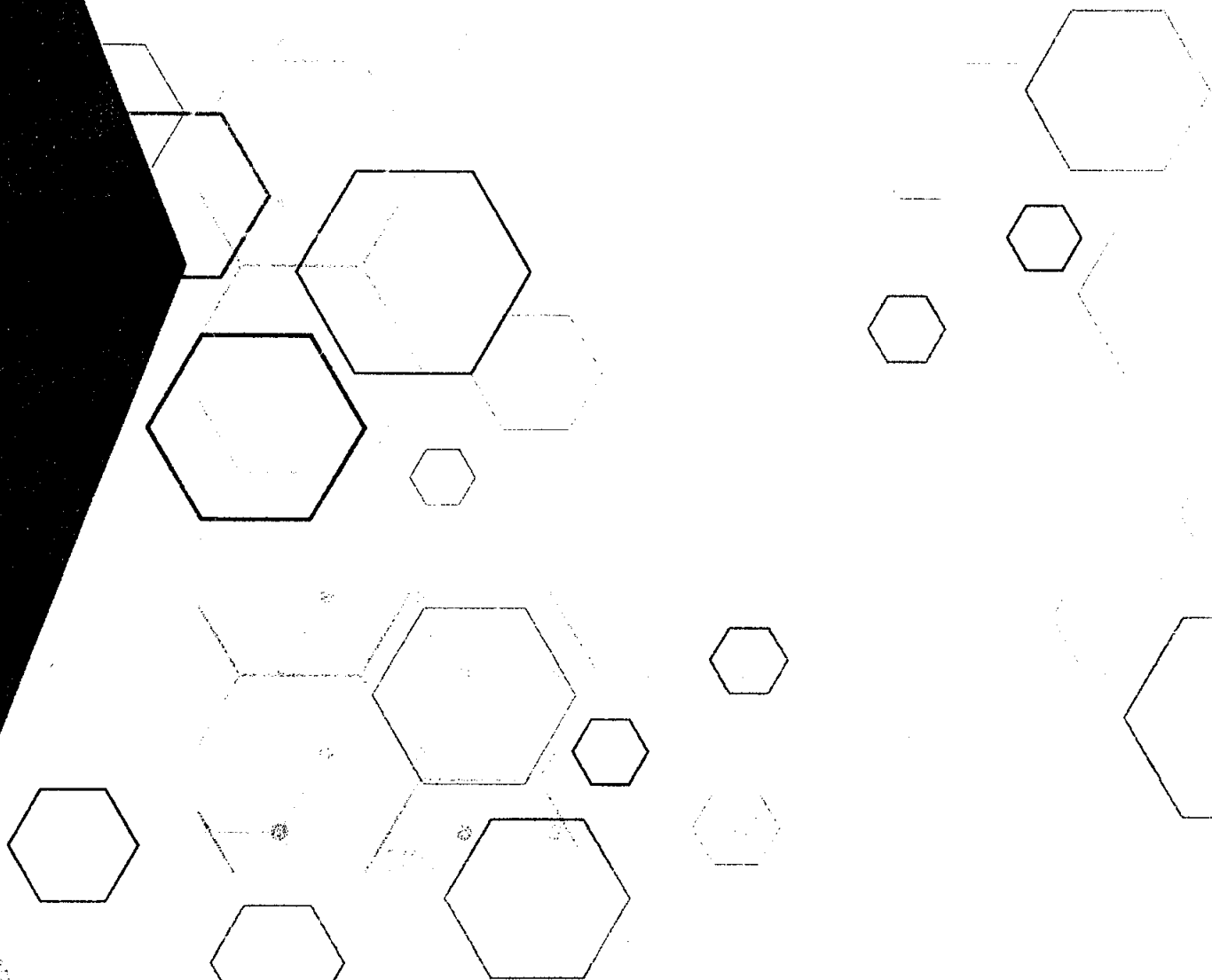
- CEO, CPPA-G.
- Advisor CTBCM, NEPRA.



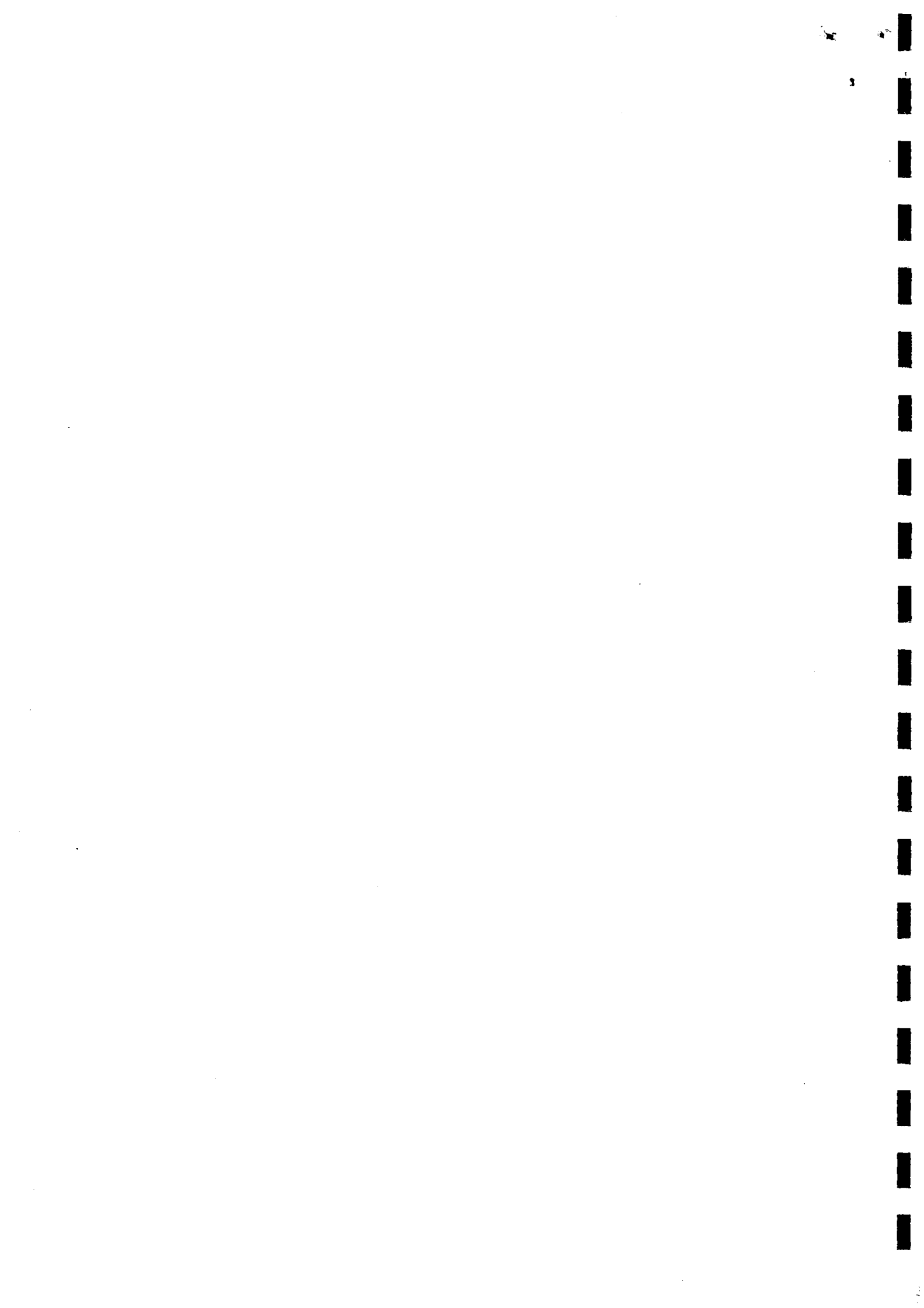
Central Power Purchasing Agency – Market Operator



Report on Compliance with Capacity Obligations



2022-2023



Disclaimer

This report is being issued by the Market Operator under the trail run plan and has no financial or any other implications for any of the Market Participants/Suppliers of Last Resort. The report is being circulated for the feedback of stakeholders to improve the process.

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Executive Summary

CPPA-G has been granted the Market Operator License by the Authority. Along with its license, the Authority has also approved the Market Commercial Code that governs the market.

The Market Commercial Code requires CPPA-G to determine the Capacity Obligations for each Market Participant and verify compliance with such obligations. The Commercial Code also requires that the Market Operator shall publish a report titled “Compliance with Capacity Obligations Report”, which shall include calculations performed, the information being utilized and the results of the verification. The report shall contain separate sections for the ex-ante and ex-post verifications, and analysis and evaluations for each Market Participant individually along with a summary of the most important conclusions.

Before the CMOD, NEPRA has required CPPA-G to issue the “Compliance with Capacity Obligations Report” report on **trial basis**. In compliance to the trial run plan, CPPA-G issued the draft and final versions of the Compliance with Capacity Obligations Report using the data from the demand forecasts prepared in previous years and the IGCEP approved by the Authority in 2021. However, the EX-WAPDA DISCOs have prepared new forecasts and a new IGCEP has also been approved by the Authority. Therefore, this report is being prepared as draft report based on the revised demand forecasts of the DISCOs and the latest approved IGCEP. Also, K-Electric has provided data for calculation of their Capacity Obligations as well which was not part of the previous reports. Hence this report contains the results for K-Electric as well.

This report is being issued comprising the data inputs, calculations performed, the results of the verifications and recommendations based on the results. The report contains verification of the following types of Capacity Obligations.

- i. Ex-post Capacity Obligations
- ii. Ex-ante Capacity Obligations

This report is circulated among the stakeholders for their comments and response. The results depicted in this report have no implications on the stakeholders as it is issued for the trial purposes.

The Ex-post Capacity Obligations have been performed based on the results of the Balancing Mechanism for Capacity (BMC) for the year 2022. The Ex-ante Capacity obligations have been performed for the years **2022-2023 (Current Year) up to 2026-2027 (Year 4)** as provided in the following table.

Table 1: Ex-Ante Capacity Obligations Horizon

Obligation Year	Financial Year
Current Year	2022-2023
Year 1	2023-2024
Year 2	2024-2025

Year 3	2025-2026
Year 4	2026-2027

The Capacity Obligations have been determined based on the Power Market Survey (PMS) methodology based demand forecasts being provided by the Ex-WAPDA DISCOs in their role as Suppliers of Last Resort. K-Electric has its own methodology for preparing of their medium-term forecasts. The details of this methodology are not known to the Market Operator. The projects planned to be procured in the future by the EX-WAPDA DISCOs have been considered as those committed projects in the approved IGCEP 2022 for which procurement process have been initiated at CPPA-G. Those committed projects for which procurement process has not been initiated at CPPA-G and DISCOs have also not provided any information on their procurement on bilateral basis have been excluded from the planned projects. K-Electric has provided its own set of data regarding its planned projects in the future which are considered while verifying compliance with the Capacity Obligations of KE. The results of the verification are given in Table 2 below.

Table 2: Capacity Obligations Compliance Matrix

#.	Market Participant ID	Market Participant Name	Ex-Ante Compliance				
			Current Year	Year 1	Year 2	Year 3	Year 4
			2022-2023	2023-2024	2024-2025	2025-2026	2026-2027
1	2	IESCO	Compliance	Compliance	Compliance	Compliance	Compliance
2	3	LESCO	Compliance	Minor Non Compliance	Compliance	Compliance	Compliance
3	4	HESCO	Compliance	Compliance	Compliance	Compliance	Compliance
4	5	SEPCO	Compliance	Compliance	Compliance	Compliance	Compliance
5	6	GEPCO	Compliance	Serious Non Compliance	Minor Non Compliance	Compliance	Compliance
6	7	MEPCO	Compliance	Serious Non Compliance	Serious Non Compliance	Compliance	Compliance
7	8	PESCO	Compliance	Compliance	Compliance	Compliance	Compliance
8	9	QESCO	Compliance	Compliance	Compliance	Compliance	Compliance
9	10	FESCO	Compliance	Serious Non Compliance	Compliance	Compliance	Compliance
10	11	TESCO	Serious Non Compliance	Serious Non Compliance	Serious Non Compliance	Compliance	Compliance
11	12	KE	Compliance	Compliance	Compliance	Compliance	Compliance

Factors impacting the results presented in this report:

It is clarified that this report is prepared based on the provision given in the approved Commercial Code for the trial period. During the trial period, CPPA-G has undertaken a thorough trial run of

all of the provisions of the Commercial Code and has recommended certain amendments, in consultation with different stakeholders including Ex-WAPDA DISCOs and KE, to the Authority for approval. There are few amendments which will have significant impact on the results presented in this report. These amendments and the potential impacts are described below:

1. **Change in System Peak Hours:** It is recommended to change the System Peak Hours from the current set of hours to a different one including more of night hours which may result in reduction of the Firm Capacity of Solar and an increase in the Firm Capacity of Wind which will have an impact on the result. It is expected that the Firm Capacity of Legacy Generators may increase and the non-compliance of some EX-WAPDA DISCOs may reduce.
2. **Change in Firm Capacity Certificates Methodology:** It is recommended that the Firm Capacity of thermal based generators shall be calculated based on multiplication of its dependable capacity being determined by the CPPA-G for Legacy Generator and System Operator for the future generators and their respective force out rate (FOR), given in the Legacy Contract or provided by the EPC of the plant. This will significantly increase the Firm Capacities of the thermal generators as compared to the current methodology and the non-compliance will reduce.
3. **Change in Allocation Factors:** The commercial allocation factors based on capacity invoices of the recent three years and capacity have been recommended. The non-compliance of EX-WAPDA DISCOs (if any) whose allocation factor is increased as compared to the existing one will reduce while the non-compliance of the Ex-WAPDA DISCOs (if any) whose Allocation Factor has been reduced as compared to the existing one will further increase.
4. **Finalization of terms and conditions of PPAA with KE:** The finalization of the terms and conditions of PPAA between CPPA-G and KE will have an impact on the results. If the amount finally agreed is less than 2050 MW, then this quantum will be available for allocation among the Ex-WAPDA DISCOs which will improve the non-compliance (if any) situation of the Ex-WAPDA DISCOs.
5. **Revision of allocation factors:** It has been recommended that when there is surplus capacity available from the Legacy Generator and any DISCO is in non-compliance in any year, then the Allocation Factor shall be adjusted to solve the non-compliance of that DISCO. It has been observed that sufficient capacity is available from the Legacy Generators which may solve the non-compliance of the Ex-WAPDA DISCOs (if any) once this mechanism is approved.
6. **Change in Capacity Obligations Percentages:** It is recommended that the percentage for the Capacity Obligations of Suppliers of Last Resort for the 4th and 5th year shall be increased from 80% and 60% to 90% and 80% respectively. This will increase the Capacity Obligations in the later years and may result in non-compliance for certain Ex-WAPDA DISCOs.

This report is being circulated as the draft report on the compliance with capacity obligations for feedback of the stakeholders for trial purposes.

Part 1: Introduction

As per approved design of the CTBCM and the provisions of the Market Commercial Code, all market participants representing demand must contribute, according to their share, to the secure and reliable supply of the power system by planning and contracting in advance enough available generation and reserve resources to meet their demand. The Balancing Mechanism for Capacity also contributes in achieving this objective. Also, the network service providers will contribute in achieving this objective by planning and ensuring network upgrade and expansion sufficiently in advance to ensure that the committed power is efficiently dispatched and there are no congestions and constraints in the network.

Capacity obligations is a very important aspect of the CTBCM as it ensures that sufficient capacity is procured in advance to meet the actual system needs to avoid any deficit or surplus in the future. Capacity obligations will be strictly observed, and non-compliance will be taken very seriously and will be dealt as per provisions of the Commercial Code.

For this trial run, the Capacity Obligations will only be calculated for the EX-WAPDA DISCOs and KE in their role as Suppliers of Last Resort as they will be the only market participants representing demand at the start of the market. As per the provisions of the commercial code, the Suppliers of Last Resorts are required to have enough capacity contracted in advance to cover 100% of their Capacity Obligations for the current and next 2 years, 80% for the 3rd year and 60% for the 4th year.

Part 2: Data Inputs

The following data inputs are required to determine the Capacity Obligations:

- i. **Demand Forecast of the Market Participants:** This information was obtained from the respective Suppliers of Last Resort i.e. EX-WAPDA DISCOs and KE.
- ii. **Existing Contracts of the Market Participants:** As the Ex-WAPDA DISCOs are currently procuring only from the Legacy Generators, therefore the allocation factors given in the Commercial Code were utilized to establish the contracts between the Legacy Generators and EX-WAPDA DISCOs. For K-Electric, its own Generators, its purchase from CPPA-G and its Contracts with IPPs were considered.
- iii. **Future Contracts/Projects of the Market Participants:** For EX-WAPDA DISCOs, the committed projects in the IGCEP 2022 were considered as the future/planned projects for the Ex-WAPDA DISCOs. K-Electric provided separate information for its planned projects in the future.
- iv. **Capacity Obligations Percentage for each type of Market Participant:** The values given in the commercial code were utilized for this purpose.
- v. **Transmission Losses of NTDC:** This value was obtained from the latest tariff determination of NEPRA for NTDC.
- vi. **Reserve Margin:** The value given in the Commercial Code was utilized for this purpose.

Further details regarding the process to obtain this data from different sources are given below.

Part 3: Calculation Methodology

The following steps were performed in order to determine the Capacity Obligations and then verify where market participants are compliant with such obligations or not.

Step 1: Submission of Demand Forecast by the Market Participants and its review by the Market Operator

As per provisions of the Market Commercial Code, all EX-WAPDA DISCOs were required to submit their demand forecasts for the period 2023 up to 2027 for the calculation of capacity obligations. CPPA-G issued letters to all Ex-WAPDA DISCOs to submit their demand forecast for the aforementioned period. In response to CPPA-G's request, all the EX-WAPDA DISCOs submitted their demand forecast via electronic mail. K-Electric also submitted its demand forecast electronically.

CPPA-G reviewed the demand forecasts submitted by the EX-WAPDA DISCOs and KE. During the review, the following points were observed:

For EX-WAPDA DISCOs:

- i. This forecast was developed by Ex-WAPDA DISCOs by utilizing the Power Market Survey (PMS) methodology, which is based on the bottom-up approach.
- ii. The process of preparation of demand forecast was also facilitated by NTDC.
- iii. The forecast covers the horizon from year 2021-22 up to 2031-32.
- iv. 2021-22 has been taken as the base year and the forecast horizon is ten years up to 2031-32.
- v. Table 1-1 of the submitted report contains the peak demand data which was utilized for determination of the Capacity Obligations.

For K-Electric:

- i. No details of the methodology utilized for the preparations of the medium-term forecast were provided.
- ii. The forecast covers the horizon from year the 2022-23 up to 2029-30.
- iii. No proper report on the data utilized and the results obtained was provided.

As per the draft Capacity Obligations CCOP, the following checks were performed on the submitted information and the results are summarized in **Table 3** below.

Table 3: Verification Checks applied on Demand Forecast

#.	Check	Compliance	Result
1	The demand forecast submitted by the Suppliers of Last Resort is consistent with the demand forecast submitted to the Authority in the latest approved Power Acquisition Programme;	There is no approved Power Acquisition Programme, so this check can't be performed.	N/A
2	The demand values for year 0 (current year) is consistent with the demand values registered in the previous year;	All Ex-WAPDA DISCOs and KE have assumed reasonable growth rates and the values are consistent	Passed
3	The demand values consistently increase or remain constant over the reporting period;	All Ex-WAPDA DISCOs and KE have reported consistently increasing demand.	Passed
4	The demand growth rate of the Suppliers of Last Resort is consistent with the growth rates used by the Planner in the latest approved Indicative Generation Capacity Expansion Plan;	It was observed that both growth rates are consistent.	Passed
5	The load factor (average hourly consumed energy divided by the absolute maximum demand) is not lower than 0.25 nor higher than 0.80, except in the case of Traders with contracts involving Firm Capacity for Firm Export;	The Load Factor of All Ex-WAPDA DISCOs and KE didn't provide sufficient data to calculate the load factor.	Passed
6	The absolute maximum demand and the maximum demand during System Peak Hours are not lower than 5% from the respective values registered in previous years, except in the case of Traders with Traders with contracts for Firm Export.	No Supplier of Last Resort has reported any decreasing trend in their demand forecasts.	Passed
7	The maximum demand during System Peak Hours is not lower than 85% of the absolute maximum demand	All Ex-WAPDA DISCOs and KE have reported their peak during the System Peak Hours.	Passed
8	There should be consistency between the demand forecasts of the Competitive Suppliers and the forecasts prepared by the Suppliers of Last Resort, particularly in relation to the execution/extension of Bilateral Contracts which are finalized during the reporting period by both types of suppliers.	Since no competitive supplier exists at this time, therefore, this check can't be applied	N/A

As depicted in the above table, the submitted demand forecast passed all the checks and verifications and was utilized for the calculation of the Capacity Obligations. The values utilized for this purpose are given in Table 4.

Table 4: Peak Demand (Load to be Served) Forecast of EX-WAPDA DISCOs and KE

Disco	Peak Demand (MW)				
	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027
IESCO	2508	2616	2765	2908	3071
LESCO	5578	5844	6067	6329	6589
HESCO	1180	1223	1267	1312	1358
SEPCO	1003	1018	1033	1048	1063
GEPCO	2749	2863	3003	3142	3290
MEPCO	4808	5110	5410	5709	6039
PESCO	2526	2672	2800	2929	3024
TESCO	522	544	569	596	625
QESCO	1129	1166	1206	1247	1299
FESCO	3512	3761	3944	4126	4342
KE	3140	3501	3735	3916	4078

Step 2: Calculation of Capacity Obligations

The Capacity Obligations for each Supplier of Last Resort have been calculated in accordance with the following formula as given in Chapter 10 of the Commercial Code:

$$CO_{BSi,p} = \frac{MD_{PH,i,p}}{(1 - Tloss_p)} * (1 + RM_p) * OB\%_{BS,p} / 100.$$

Where:

- $CO_{BSi,p}$ is the Capacity Obligation of the Supplier of Last Resort "i" in the period "p" which will be verified by the Market Operator
- $MD_{PH,i,p}$ is the Maximum Demand at System Peak Hours of the Supplier of Last Resort "i" in the period "p". The value of $MD_{PH,i,p}$ will be the forecasted Maximum Demand at System Peak Hours, submitted by the involved Supplier of Last Resort to the Market Operator, for the current year and all periods immediately thereafter;
- $OB\%_{BS,p}$ is the Capacity Obligation Percentage, applicable to Suppliers of Last Resort, corresponding to period "p"
- $Tloss_p$ is the value of the cap (expressed in percentage) on Transmission losses of NTDC as determined by the Authority in the latest tariff determination.
- RM_p is the Reserve Margin applicable to period "p".

The following values were utilized in order to calculate the Capacity Obligations as per above formula:

1. The Maximum Demand at the System Peak Hours of each Supplier of Last Resort ($MD_{PEL,p}$) was obtained from the values given in **Table 4** above
2. The Capacity Obligation Percentage, applicable to each Supplier of Last Resort ($OB\%_{NS,p}$) for each year was obtained from **Table 4** of the Commercial Code. The same is reproduced below.

Table 5: Capacity Obligations of Suppliers of Last Resort

Period		Capacity Obligations
		(In % of the registered or forecasted Maximum Demand at System Peak Hours)
Ex-post compliance with the Capacity Obligations	Previous year ⁽¹⁾	100
	Current year ⁽²⁾	100
Ex-ante compliance with the Capacity Obligations	Year 1 ⁽³⁾	100
	Year 2	100
	Year 3	80
	Year 4	60

3. The value of the cap (expressed in percentage) on Transmission losses of NTDC as determined by the Authority in the latest tariff determination was obtained from the Authority Determination **NEPRA/R/ADG(TRF)/TRF-533/NTDC-2020/17537-17539 dated September 16,2022**. This value is equal to **2.639%**.
4. For Reserve Margin (RM_p), the value of 10% as given in Clause 9.2.4.3 of the Commercial Code was utilized.

The Capacity Obligations determined for each EX-WAPDA DISCO and KE based on the data as described above have been given in **Table 6** below.

Table 6: Capacity Obligation of EX-WAPDA DISCOs and KE

#.	Market Participant ID	Market Participant Name	Current Year	Year 1	Year 2	Year 3	Year 4
			2022-2023	2023-2024	2024-2025	2025-2026	2026-2027
1	2	LESCO	6,302.11	6,602.64	6,854.59	5,720.48	4,466.61
2	3	IESCO	2,833.58	2,955.60	3,123.94	2,628.40	2,081.80
3	4	FESCO	3,967.91	4,249.24	4,455.99	3,729.30	2,943.40
4	5	GEPCO	3,105.86	3,234.66	3,392.84	2,839.91	2,230.26
5	6	HESCO	1,333.18	1,381.76	1,431.48	1,185.85	920.57
6	7	SEPCO	1,133.21	1,150.15	1,167.10	947.24	720.60

#.	Market Participant ID	Market Participant Name	Current Year	Year 1	Year 2	Year 3	Year 4
			2022-2023	2023-2024	2024-2025	2025-2026	2026-2027
7	8	MEPCO	5,432.15	5,773.36	6,112.30	5,160.09	4,093.77
8	9	PESCO	2,853.91	3,018.87	3,163.48	2,647.38	2,049.94
9	10	TESCO	589.76	614.62	642.87	538.70	423.68
10	11	QESCO	1,275.56	1,317.37	1,362.56	1,127.10	880.58
11	12	KE	3,548.09	3,955.61	4,219.54	3,539.39	2,764.22

Step 3: Ex-ante Verification of Capacity Obligations

In order to check compliance with the Capacity Obligations calculated in Step 2 above, the following information was utilized:

- i. For Bilateral Contracts of the Suppliers of Last Resort, the Market Operator required all Suppliers of Last Resort to submit information regarding contracts that they have bilaterally executed with the generation plants. Contracted Capacities of all such projects were considered for checking compliance with the Capacity Obligations.
- ii. For the Legacy Contracts, the Firm Capacity Certificates were calculated using the provisions of Chapter 8 of the Commercial Code.
- iii. For allocation of the Firm Capacity certificates of Legacy Generators, the factors given in Table 8 of Commercial Code were utilized. The table is reproduced below (Table 15).
- iv. For future planned projects of Ex-WAPDA DISCOs, only those committed projects in the approved IGCEP 2022 for which the procurement process has been initiated at CPPA-G level were considered. For planned projects of KE, the information provided by KE was utilized.

Step 3.1: Firm Capacity Certificates of existing Legacy Generators

Following assumptions were made while considering the firm capacities of the Legacy Generators:

- 1- Davis Energen Private Limited plant availability was zero in the last three years even though its PPA is intact. The Firm Capacity of the same has been considered zero.
- 2- Retirements of existing Legacy Generators have been considered as per the approved IGCEP.
- 3- Due to the non-availability of data:
 - a. For Gulpur Hydropower project (Mira Power Ltd), Firm Capacity factor of Malakand-III Hydropower Project of Pakhtunkhwa Energy Development Organization (PEDO) is used.
 - b. Tenaga Generasi Limited, Hydro China Dawood Wind Farm, and Zephyr Power Limited have been given the Firm Capacity factor of Jhimpir Wind Power Plant.
 - c. Firm Capacity of Bagasse based plants is taken the same as that of installed capacity.
 - d. AJ Power (Private) Limited and Harappa Solar (Private) Limited are given a 0.22 Firm Capacity factor.

The Firm Capacities of the existing Legacy Generators of Ex-WAPDA DISCOs have been given in Table 7 and the Firm Capacities of the existing Legacy Generators K-Electric have been given in Table 8. The list of abbreviates is placed at Annexure-A.

Table 7: Firm Capacities of Existing Legacy Generators

#.	Projects	Technology	Initial Firm Capacity (MW)	#.	Projects	Technology	Initial Firm Capacity (MW)
1	EPTL	Thermal	527.09	2	Gomal Zam	Hydel	7.87
3	FPCDL	Thermal	157.81	4	Rasul	Hydel	8.3
5	HPGCL	Thermal	161.79	6	Dargai	Hydel	14.56
7	HSR	Thermal	1158.22	8	Nandipur	Hydel	5.85
9	LPTL	Thermal	183.59	10	Shadiwal	Hydel	3.46
11	NEL	Thermal	196.7	12	Chichoki	Hydel	4.47
13	Balloki	Thermal	1000.9	14	Kuram garhi	Hydel	3.35
15	HBS	Thermal	1075.7	16	Renala	Hydel	0.97
17	NCPL	Thermal	170.89	18	Chitral	Hydel	0.97
19	NPL	Thermal	176.8	20	Jabban	Hydel	20.28
21	OPCL	Thermal	187.53	22	Jagran	Hydel	27.27
23	PQEPC	Thermal	1225.04	24	Malakand-III	Hydel	75.36
25	QATPL	Thermal	1033.06	26	New Bong Escape	Hydel	67.82
27	SPL	Thermal	189.28	28	Patrind	Hydel	129.09
29	SECL	Thermal	186.26	30	Daral khwar	Hydel	2
31	UCH-II	Thermal	335.68	32	Gul pur	Hydel	93
33	KAPCO	Thermal	1458.5	34	ACT	Wind	15.39
35*	AEL	Thermal	0	36	Artistic	Wind	24.52
37	SABA	Thermal	101.68164 75	38	FFCEL	Wind	18.91
39	HUBCO	Thermal	1158.249	40	FWEL-1	Wind	20.29
41	LIBERTY	Thermal	200.863	42	FWEL-2	Wind	21.88
43	FKPCL	Thermal	113.897	44	Gul ahmad	Wind	17.72
45	ROUSCH	Thermal	410.696	46	Hawa	Wind	26.28
47	KEL	Thermal	118.027	48	Jhampir	Wind	27.4
49	AES Lalpir	Thermal	302.48221 21	50	Master	Wind	23.04
51	AES Pakgen	Thermal	303.62915 82	52	Metro	Wind	18.45
53*	HCPC	Thermal	0	54	Sachal	Wind	20.47
55	UCH	Thermal	577.172	56	Sapphire	Wind	22.01

#.	Projects	Technology	Initial Firm Capacity (MW)
57	Guddu	Thermal	507.74169 98
59	Guddu 747	Thermal	558.95483 22
61	Jamshoro	Thermal	294.10
63	Nandipur	Thermal	445.98470 94
65	Muzaffargarh	Thermal	424.55
67	Agar textile	SPP	12.2
69	Lucky cement	SPP	20
71	Thatta Cement	SPP	18.80
73	Al-noor sugar mill	SPP	36
75	kumhariwala	SPP	2.82
77	Noon Sugar	SPP	14
79	Anoond	SPP	10
81	Omni	SPP	12.8
83	Tarbela	Hydel	3,478.00
85	Tarbela Ext 4	Hydel	1,410.00
87	Mangla	Hydel	1,000.00
89	Ghazi Brotha	Hydel	1,081.04
91	Warsak	Hydel	179.77
93	Chashma	Hydel	98.44
95	Jinnah	Hydel	19.18
97	Allai khwar	Hydel	80.21
99	Khan khwar	Hydel	30.75
101	Dubair Khwar	Hydel	111.6
103	Neelam jehlam	Hydel	801.98
105	Golengole	Hydel	14.29
107	Apollo	Solar	28.78
109	Best Green	Solar	28

#.	Projects	Technology	Initial Firm Capacity (MW)
58	TGF	Wind	21.04
60	TGS	Wind	22.9
62	TGT	Wind	21.89
64	Tricon-A	Wind	27.62
66	Tricon-B	Wind	27.07
68	Tricon-C	Wind	26.74
70	UEP	Wind	41.15
72	Yunus	Wind	20.63
74	ZEPL	Wind	21.7
76	Tenaga	Wind	27.4
78	Dawood	Wind	27.4
80	Zephire	Wind	27.4
82	JDW-II	Bagasse	26
84	JDW-III	Bagasse	27
86	RYKML	Bagasse	30
88	Chiniot Power	Bagasse	63
90	Hamza Sugar	Bagasse	15
92	Thall Power	Bagasse	25
94	Almoiz Industries	Bagasse	36
96	Chanar Energy	Bagasse	22
98	Chashnupp - II	Nuclear	302.53
100	Chashnupp - III	Nuclear	311
102	Chashnupp - IV	Nuclear	304.58
104	K-2	Nuclear	996.15
106	Quaid e Azam	Solar	28.75
108	Crest Energy	Solar	29.47
110	AJ Power	Solar	2.64

#.	Projects	Technology	Initial Firm Capacity (MW)
111	Harappa	Solar	3.96
113	Tricom	Wind	15.00
115	Marala HPP	Hydel	6.48
117	APL	Thermal	199.70
119	CPH	Thermal	1038.34
121	Chashnupp-I	Nuclear	312.20
123	Ranolia	Hydel	14.45
125	MetroWind	Wind	18.0
127	NASDA	Wind	15.00
129	Din	Wind	15.00
131	Act_2	Wind	15.00
133	Liberty_Wind-2	Wind	15.00
135	Zhenfa	Solar	22.00
137	Shishi	SPP	1.85

#.	Projects	Technology	Initial Firm Capacity (MW)
112	Master_Green	Wind	15.00
114	Jhing	Hydel	12.24
116	Pakpattan	Hydel	2.397
118	AGL	Thermal	150.29
120	EPQL	Thermal	193.83
122	Karot	Hydel	612
124	Lucky	Thermal	607.20
126	Lakeside	Wind	15.00
128	Artistic_Wind_2	Wind	15.00
130	Gul_Electric	Wind	15.00
132	Liberty_Wind-1	Wind	15.00
134	Indus_Energy	Wind	15.00
136	K3	Nuclear	996.15

*AEL & HCPC have their GSA expired

Table 8: Firm Capacities of KE Legacy Generators

#.	Projects	Technology	Initial Firm Capacity (MW)
1	BQPS1 – Unit 1	Thermal	173.22
3	BQPS1 – Unit 5	Thermal	188.35
5	BQPS2	Thermal	509.59
7	KGTPS	Thermal	89.88
9	Ourson	Solar	12.87
11	FPCL	Thermal	48.34
13	Tapal	Thermal	109.92

#.	Projects	Technology	Initial Firm Capacity (MW)
2	BQPS1 – Unit 2	Thermal	172.76
4	BQPS1 – Unit 6	Thermal	179.60
6	KPC	Thermal	217.53
8	SGTPS	Thermal	93.93
10	Gharo	Solar	13.70
12	SNPC	Thermal	85.62
14	Gul	Thermal	113.46

Step 3.2 Firm Capacity Certificates of planned projects

As described above, the committed projects in the approved IGCEP-2022, for which the procurement at CPPA-G level has been initiated, have been considered as planned projects for the DISCOs. These projects have also been allocated among the EX-WAPDA DISCOs using the Allocation Factors as given in of the Commercial Code and reproduced in **Table 15**. For KE, the list of projects communicated by the K-Electric was utilized. For the calculation of the Firm Capacities, the Equivalent Availability Factors as given in Table 1 of the Commercial Code (reproduced below) were utilized. For run-of-river hydro projects, a 0.85 Equivalent Availability Factor was utilized.

Table 9: Equivalent Availability Factors

Sr. No.	Generation Technology	Equivalent Availability Factor
1	Dispatchable Technologies	
1.1	Hydro with reservoir	0.92
1.2	Thermal (either liquid fuels, gas or coal fired)	0.92
1.3	Bagasse	0.92
1.4	Thermal Solar	0.87
1.5	Nuclear	0.87
2	Non-dispatchable Technologies	
2.1	Hydro run of river	Based on the feasibility study
2.2	Wind	0.30
2.3	Solar PV	0.22

The Firm Capacities of Planned Projects for Ex-WAPDA DISCOs, calculated by utilizing the above equivalent availability factors, have been given in **Table 10** below and the Firm Capacities of Planned Projects for K-Electric are provided in **Table 12**.

The following Planned Projects have been considered for the Ex-Ante Capacity Obligations as Committed Projects after evaluating their status with the CPPA-G-SPA. Those committed projects in the approved IGCEP 2022 which have no correspondence with the CPPA-G-SPA in terms of consent or initial negotiation stage are excluded from the calculations.

Table 10: Firm Capacities of Planned Projects for Ex-WAPDA DISCOs

#.	Name of Committed Project	Fuel Type	Installed Capacity (MW)	Firm Capacity (MW)	Expected Schedule of Commissioning
1	Jabori	Hydro	10.2	8.67	Apr-22
2	Thar TEL	Local Coal	330	303.6	Jul-22
3	Trimmu	CCGT_RLNG	1263	1161.96	Jul-22
4	Mangla (U #5-6)	Hydro	70	59.5	Sep-22

#.	Name of Committed Project	Fuel Type	Installed Capacity (MW)	Firm Capacity (MW)	Expected Schedule of Commissioning
5	Jamshora Coal (U #1)	Imported Coal	660	607.2	Dec-22
6	Thal Nova	Local Coal	330	303.6	Dec-22
7	Thar-I (SSRL)	Local Coal	1320	1214.4	Dec-22
8	Helios	Solar	50	11	Apr-23
9	HNDS	Solar	50	11	Apr-23
10	Meridian	Solar	50	11	Apr-23
11	Mangla (U #3-4)	Hydro	70	59.5	May-23
12	Access Electric	Solar	10	2.2	Sep-23
13	Access_Solar	Solar	11.52	2.5344	Sep-23
14	Kurram Tangi	Hydro	18	15.3	Oct-23
15	Riali-II	Hydro	7.08	6.018	Dec-23
16	Lawi	Hydro	69	58.65	Apr-24
17	Suki Kinari (U #1)	Hydro	221	187.85	May-24
18	Safe	Solar	10	2.2	Jun-24
19	Western	Wind	50	15	Jun-24
20	Mangla (U #1-2)	Hydro	70	59.5	Jul-24
21	Tarbela Ext5 (U #1)	Hydro	510	433.5	Jul-24
22	Suki Kinari (U #2)	Hydro	221	187.85	Jul-24
23	CASA-1000	Cross Border Interconnection	1000	1000	Aug-24
24	Tarbela Ext5 (U #2)	Hydro	510	433.5	Aug-24
25	Shahtaj	Bagasse	32	15	Aug-24
26	Tarbela Ext5 (U #3)	Hydro	510	433.5	Sep-24
27	Suki Kinari (U #3)	Hydro	221	187.85	Sep-24
28	Suki Kinari (U #4)	Hydro	221	187.85	Nov-24
29	Kathai-II	Hydro	8	6.8	Dec-24
30	Gwadar	Local Coal	300	276	Aug-25
31	Mangla (U #9-10)	Hydro	70	59.5	Sep-25
32	Dasu (U #1)	Hydro	360	306	May-26
33	Mohmand Dam (U #1)	Hydro	200	170	May-26
34	Dasu (U #2)	Hydro	360	306	Jul-26
35	Mohmand Dam (U #2)	Hydro	200	170	Jul-26
36	Dasu (U #3)	Hydro	360	306	Aug-26
37	Mohmand Dam (U #3)	Hydro	200	170	Sep-26
38	Dasu (U #4)	Hydro	360	306	Nov-26
39	Mangla (U #7-8)	Hydro	30	25.5	Nov-26

#.	Name of Committed Project	Fuel Type	Installed Capacity (MW)	Firm Capacity (MW)	Expected Schedule of Commissioning
40	Mohmand Dam (U #4)	Hydro	200	170	Nov-26
41	Dasu (U #5)	Hydro	360	306	Feb-27
42	Keyal Khwar (U #1)	Hydro	64	54.4	Feb-27
43	Dasu (U #6)	Hydro	360	306	May-27
44	Keyal Khwar (U #2)	Hydro	64	54.4	May-27

The following committed projects (Table 11) in the latest approved IGCEP are excluded from the planned projects for compliance with Ex-Ante Capacity Obligation as these projects have no correspondence with the CPPA-G-SPA and the Ex-WAPDA DISCOs have not communicated any information to the Market Operator regarding their procurement on bilateral basis in terms of consent or initial negotiation for their EPA/PPA. Besides that, IGCEP has also considered a 500 MW of Capacity from KAPCO beyond the expiry of its PPA, however, for this calculation, this capacity has not been included in this calculation as the Market Operator has no information regarding the procurement of this capacity at the time of preparation of this report.

Table 11: List of excluded committed projects

#.	Name of Committed Project	Fuel Type	Installed Capacity (MW)	Firm Capacity (MW)	Expected Schedule of Commissioning
1	Chianwali	Hydro	5.38	4.573	Mar-22
2	Deg Outfall	Hydro	4.04	3.434	Jun-22
3	Karora	Hydro	11.8	10.03	Aug-22
4	Koto	Hydro	40.8	34.68	Sep-22
5	Jagran-II (U #1)	Hydro	12	10.2	Apr-23
6	Jagran-II (U #2)	Hydro	12	10.2	May-23
7	Jagran-II (U #3)	Hydro	12	10.2	Jul-23
8	Jagran-II (U #4)	Hydro	12	10.2	Jul-23
9	Chamfall	Hydro	3.22	2.737	Aug-23
10	Manjhand	Solar	50	11	Sep-23
11	Siachen	Solar	100	22	Sep-23
12	Zorlu	Solar	100	22	Dec-23
13	Trans_Atlantic	Wind	50	15	Jun-24
14	Gorkin Matiltan	Hydro	84	71.4	Jul-24
15	Chapari Charkhel	Hydro	10.56	8.976	Sep-25
16	Gabral Kalam	Hydro	88	74.8	Nov-27
17	Madyan	Hydro	157	133.45	Nov-27
18	Balakot	Hydro	300	255	Dec-27
19	Net Meter	Solar	370	81.4	Jul-22

#.	Name of Committed Project	Fuel Type	Installed Capacity (MW)	Firm Capacity (MW)	Expected Schedule of Commissioning
20	Net Meter	Solar	370	81.4	Jul-23
21	Net Meter	Solar	370	81.4	Jul-24
22	Net Meter	Solar	370	81.4	Jul-25
23	Net Meter	Solar	370	81.4	Jul-26
24	Net Meter	Solar	370	81.4	Jul-27
25	Net Meter	Solar	370	81.4	Jul-28
26	Net Meter	Solar	370	81.4	Jul-29
27	Net Meter	Solar	370	81.4	Jul-30

Table 12: Firm Capacities of Planned Projects of KE

#.	Name of Committed Project	Fuel Type	Installed Capacity (MW)	Firm Capacity (MW)	Expected Schedule of Commissioning
1	Project - 1	RLNG	942.4	867.008	FY-23
2	Project - 2	Solar	150	33	1-Mar-25
3	Project - 3	Solar	350	77	1-Mar-25
4	Project - 4	Local Coal	330	303.6	1-Jun-26
5	Project - 5	Local Coal	330	303.6	1-Jul-26
6	Project - 6	Solar	200	44	1-Jul-26
7	Project - 7	Wind	100	30	1-Jul-27
8	Project - 8	Local Coal	330	303.6	1-Jul-28
9	Project - 9	Solar	200	44	1-Jul-28
10	Project - 10	Hydel	82	69.7	1-Jul-28
11	Project - 11	Wind	100	30	1-Jul-29
12	Project - 12	Additional Supply from NTDC	2050	2050	1-Jun-24

Retirement Schedule:

The retirement schedule for the Legacy Generators of Ex-WAPDA DISCOs was considered as per approved IGCEP 2022. For bilateral contracts of Small Power Producers (SPPs) with HESCO, the retirement date was confirmed from the contract data shared by individual Ex-WAPDA DISCOs. K-Electric provided its own schedule for retirement of its Legacy Generators.

The retirement schedule for Legacy Generators of Ex-WAPDA DISCOs is depicted in Table 13 and for Legacy Generator of K-Electric, the schedule for retirement is depicted in Table 14 below.

Table 13: Retirement Plan of Legacy Generators of Ex-WAPDA DISCOs

Plant/Unit Name	Firm Capacity				PPA End Date	Rationale for Retirement	Firm Cap	Total (MW)	FCC	Retirement Year
	2023	2024	2025	2026						
KAPCO 1	400				Oct-22	PPA Expiry	1458.5	1458.5	14585	2022-2023
KAPCO 2	900									
KAPCO 3	300									
Guddu-II U (5-10)	620				Sep-40	CCOP Decision as depicted in the approved IGCEP	379.1	1097.74	10977.4	2023-2024
Jamshoro-I U1	250									
Jamshoro-II U4	200									
Muzaffargarh-I U1	210									
Muzaffargarh-I U2	210									
Muzaffargarh-I U3	210									
Muzaffargarh-I U4	320									
HESCO M/s Anoud Textile Mills Limited		10			Jun-25	HESCO Contract Expiry	10	10	100	2024-2025
HESCO M/s Omni Power Private Limited		12.8			Sep-25		12.8	12.8	128	2025-2026
HESCO M/s Lucky Cement Limited			20		Jun-26		20	20	200	2025-2026
HESCO M/s Thatta Power (Pvt.) Limited			18.8		Dec-26		18.8	18.8	188	2026-2027

Table 14: Retirement Plan of Legacy Generators of K-Electric

#.	Name	Installed Capacity (MW)	Firm Capacity MW	Retirement Year
1	Gul Ahmed	136	113.5	2024-2025
2	Tapal	126	109.9	2023-2024
3	BQPS 1 – Unit 1	210	173.2	2023-2024
4	BQPS 1 – Unit 2	210	172.6	2023-2024
5	BQPS 1 – Unit 5	210	188.4	2026-2027

Step 3.3: Allocation of Firm Capacity Certificates

The firm capacity certificates of installed and committed plants of Ex-WAPDA DISCOs are allocated among Ex-WAPDA DISCOs and a share is provided to KE. First, a fixed quantity of firm capacity certificates was subtracted for KE each year and then the remaining firm capacity certificates were allocated to Ex-WAPDA DISCOs according to the allocation factor given in the commercial code. The Factors are reproduced in **Table 15** below. According to the fixed quantity contract with KE, 12000 firm capacity certificates were subtracted from the year 2021-22. Similarly, 12000 firm capacity certificates were subtracted from the year 2022-23. From there onwards 20500 firm capacity certificates were subtracted each year. These values have been taken as incorporated by NTDC in the Power Market Survey (PMS) based consolidated demand forecast report for the NTDC System and has also been confirmed by K-Electric during the preparation of this report. The remaining Firm Capacity Certificates were allocated to each EX-WAPDA DISCO as per the Allocation Factors given in **Table 15** below.

Table 15: Suppliers of Last Resort Allocation Factors

Supplier	Allocation Factor
LESCO	21.10%
GEPSCO	9.82%
FESCO	13.09%
IESCO	10.15%
MEPCO	17.06%
PESCO	12.89%
HESCO	4.79%
QESCO	5.62%
TESCO	1.74%
SEPCO	3.73%
K-Electric	As per Bilateral Contract

The allocation of the Firm Capacity Certificates to EX-WAPDA DISCOs and KE from the Legacy Generators of Ex-WAPDA DISCOs as described above is presented in Table 16.

Table 16: Allocation of Firm Capacity Certificates of Legacy Generator of Ex-WAPDA DISCOs

#.	Market Participant ID	Market Participant Name	Current Year	Year 1	Year 2	Year 3	Year 4
			2022-2023	2023-2024	2024-2025	2025-2026	2026-2027
1	2	LESCO	67,783	64,285	70,478	72,164	76,712
2	3	IESCO	32,607	30,924	33,903	34,714	36,902
3	4	FESCO	42,051	39,881	43,723	44,769	47,590
4	5	GEPCO	31,546	29,918	32,801	33,585	35,702
5	6	HESCO	15,388	14,594	16,000	16,382	17,415
6	7	SEPCO	11,983	11,364	12,459	12,757	13,561
7	8	MEPCO	54,805	51,976	56,984	58,346	62,024
8	9	PESCO	41,409	39,272	43,055	44,085	46,863
9	10	TESCO	5,590	5,301	5,812	5,951	6,326
10	11	QESCO	18,054	17,122	18,772	19,221	20,432
11	12	K-Electric	12,000	20,500	20,500	20,500	20,500

Step 3.4: Ex-ante Compliance with Capacity Obligations Report

For verification of compliance, the Capacity Obligations as calculated above are compared with the Firm Capacity Certificates allocated to each EX-WAPDA DISCO and KE.

In case the value of the Firm Capacity Certificates allocated to a Supplier of Last Resort is above 98% of the Capacity Obligations of such Supplier of Last Resort, the obligations are considered fulfilled for that year. In case value of the Firm Capacity Certificates allocated to Supplier of Last Resort is lower than 98% of the Capacity Obligation, the obligation is considered not fulfilled. The non-compliance is categorized as Minor and Serious Non-Compliance as per the following criteria:

- 1. Minor Non-Compliance:** When the difference between the capacity obligation and credited capacity is below 5% during the year, it is categorized as minor non-compliance.
- 2. Serious Non-Compliance:** When the difference between the capacity obligation and credited capacity is above 5% during the year, it is categorized as serious non-compliance.

The calculations performed as per the mechanism described above are presented in Table 17 below.

Table 17: Ex-ante Compliance with Capacity Obligations

PESCO					
Year	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027
Credited Capacity (MW)	4,140.88	3,927.16	4,305.52	4,408.47	4,686.32
Capacity Obligation (MW)	2,853.91	3,018.87	3,163.48	2,647.38	2,049.94
Difference (MW)	1,286.96	908.29	1,142.04	1,761.09	2,636.38
Difference (%)	45.09	30.09	36.10	66.52	128.61

IESCO					
Year	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027
Credited Capacity (MW)	3,260.66	3,092.37	3,390.31	3,471.37	3,690.16
Capacity Obligation (MW)	2,833.58	2,955.60	3,123.94	2,628.40	2,081.80
Difference (MW)	427.08	136.77	266.37	842.97	1,608.36
Difference (%)	15.07	4.63	8.53	32.07	77.26

LESCO					
Year	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027
Credited Capacity (MW)	6,778.31	6,428.48	7,047.83	7,216.36	7,671.17
Capacity Obligation (MW)	6,302.11	6,602.64	6,854.59	5,720.48	4,466.61
Difference (MW)	476.20	-174.17	193.24	1,495.87	3,204.55
Difference (%)	7.56	-2.64	2.82	26.15	71.74

FESCO					
Year	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027
Credited Capacity (MW)	4205.12	3988.09	4372.33	4476.88	4759.03
Capacity Obligation (MW)	3967.91	4249.24	4455.99	3729.30	2943.40
Difference (MW)	237.21	-261.14	-83.67	747.58	1815.64
Difference (%)	5.98	-6.15	-1.88	20.05	61.69

GEPSCO					
Year	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027
Credited Capacity (MW)	3154.65	2991.83	3280.08	3358.51	3570.18
Capacity Obligation (MW)	3105.86	3234.66	3392.84	2839.91	2230.26
Difference (MW)	48.78	-242.83	-112.76	518.61	1339.93
Difference (%)	1.57	-7.51	-3.32	18.26	60.08

MEPCO					
Year	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027
Credited Capacity (MW)	5480.48	5197.62	5698.39	5834.65	6202.37
Capacity Obligation (MW)	5432.15	5773.36	6112.30	5160.09	4093.77
Difference (MW)	48.32	-575.74	-413.92	674.55	2108.60
Difference (%)	0.89	-9.97	-6.77	13.07	51.51

SEPCO					
Year	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027
Credited Capacity (MW)	1198.25	1136.41	1245.90	1275.69	1356.09
Capacity Obligation (MW)	1133.21	1150.15	1167.10	947.24	720.60
Difference (MW)	65.05	-13.74	78.80	328.45	635.49
Difference (%)	5.74	-1.19	6.75	34.67	88.19

HESCO					
Year	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027
Credited Capacity (MW)	1538.77	1459.36	1599.96	1638.22	1741.46
Capacity Obligation (MW)	1333.18	1381.76	1431.48	1185.85	920.57
Difference (MW)	205.59	77.59	168.48	452.36	820.89
Difference (%)	15.42	5.62	11.77	38.15	89.17

QESCO					
Year	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027
Credited Capacity (MW)	1805.41	1712.23	1877.19	1922.08	2043.22
Capacity Obligation (MW)	1275.56	1317.37	1362.56	1127.10	880.58
Difference (MW)	529.85	394.86	514.64	794.98	1162.64
Difference (%)	41.54	29.97	37.77	70.53	132.03

TESCO					
Year	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027
Credited Capacity (MW)	558.97	530.12	581.20	595.09	632.60
Capacity Obligation (MW)	589.76	614.62	642.87	538.70	423.68
Difference (MW)	-30.79	-84.50	-61.67	56.40	208.92
Difference (%)	-5.22	-13.75	-9.59	10.47	49.31

Year	KE				
	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027
Credited Capacity (MW)	4075.78	4469.88	4466.42	4770.02	4929.27
Capacity Obligation (MW)	3548.09	3955.61	4219.54	3539.39	2764.22
Difference (MW)	527.69	514.27	246.88	1230.62	2165.04
Difference (%)	12.95	11.51	5.53	25.80	43.92

Based on the results depicted above, the compliance status for each EX-WAPDA DISCO and KE for ex-ante Capacity Obligations has been depicted in Table 18 below.

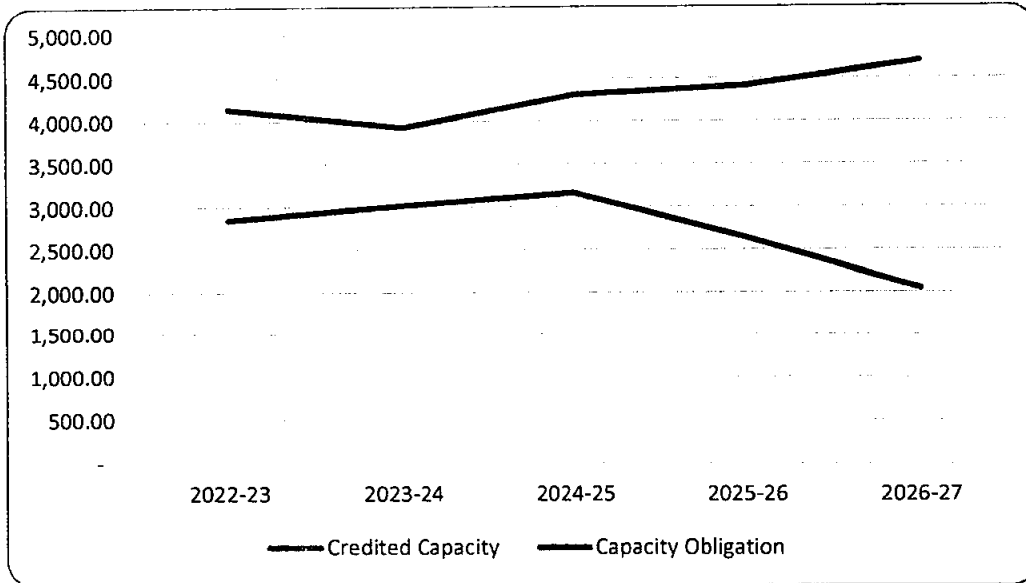
Table 18: Summary of Compliance with Capacity Obligations

#.	Market Participant ID	Market Participant Name	Ex-Ante Compliance				
			Current Year	Year 1	Year 2	Year 3	Year 4
			2022-2023	2023-2024	2024-2025	2025-2026	2026-2027
1	2	IESCO	Compliance	Compliance	Compliance	Compliance	Compliance
2	3	LESCO	Compliance	Minor Non Compliance	Compliance	Compliance	Compliance
3	4	HESCO	Compliance	Compliance	Compliance	Compliance	Compliance
4	5	SEPCO	Compliance	Compliance	Compliance	Compliance	Compliance
5	6	GEPCO	Compliance	Serious Non Compliance	Minor Non Compliance	Compliance	Compliance
6	7	MEPCO	Compliance	Serious Non Compliance	Serious Non Compliance	Compliance	Compliance
7	8	PESCO	Compliance	Compliance	Compliance	Compliance	Compliance
8	9	QESCO	Compliance	Compliance	Compliance	Compliance	Compliance
9	10	FESCO	Compliance	Serious Non Compliance	Compliance	Compliance	Compliance
10	11	TESCO	Serious Non Compliance	Serious Non Compliance	Serious Non Compliance	Compliance	Compliance
11	12	KE	Compliance	Compliance	Compliance	Compliance	Compliance

Part 4: Results

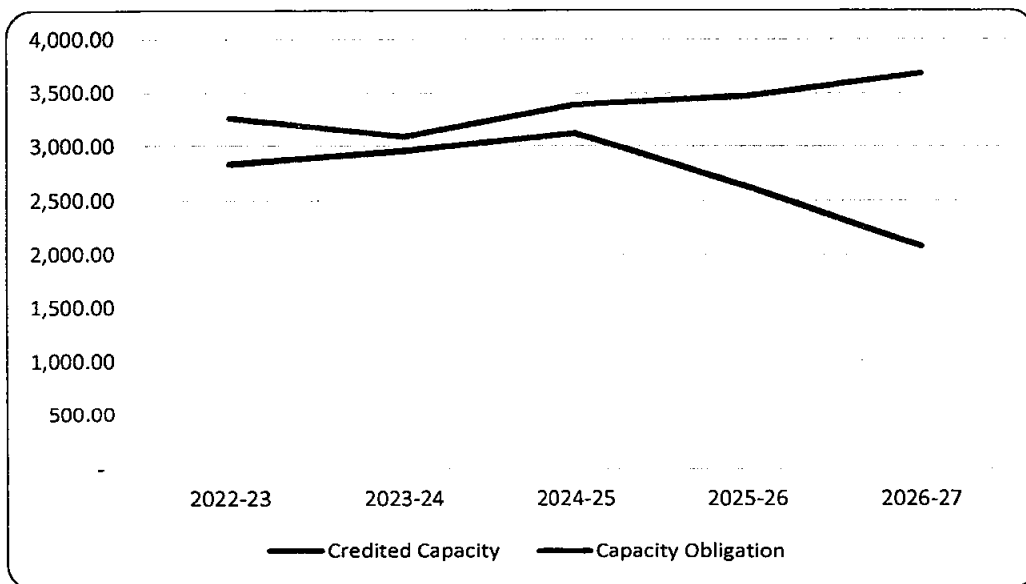
Based on the calculations performed above, detailed results have been prepared for each Market Participants. These results are depicted in the following figures.

Figure 1: Results for PESCO



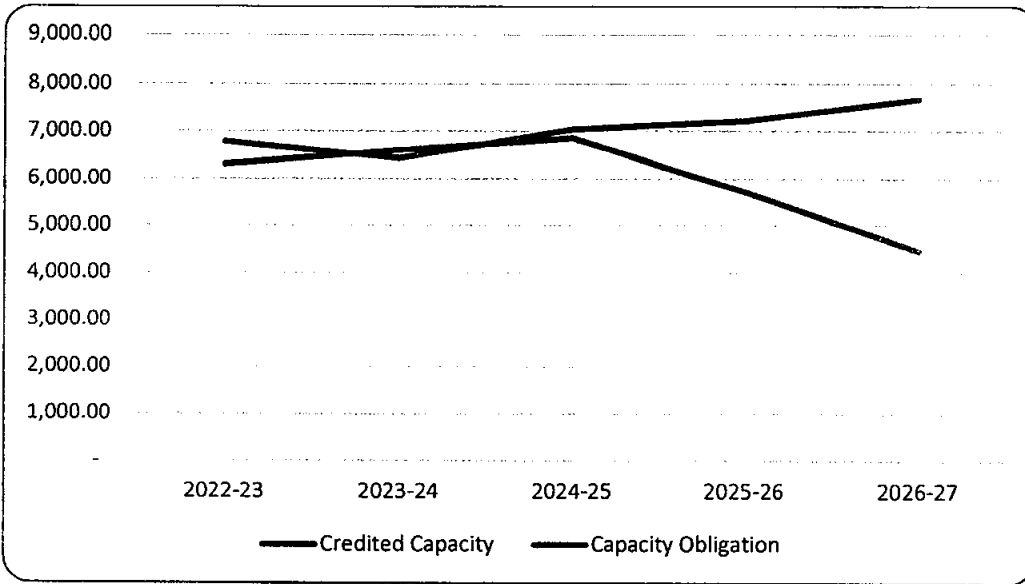
It can be observed from the above figure that PESCO is compliant in all years as its Credited Capacity covers 100% of its Capacity Obligation in all years.

Figure 2: Results for IESCO



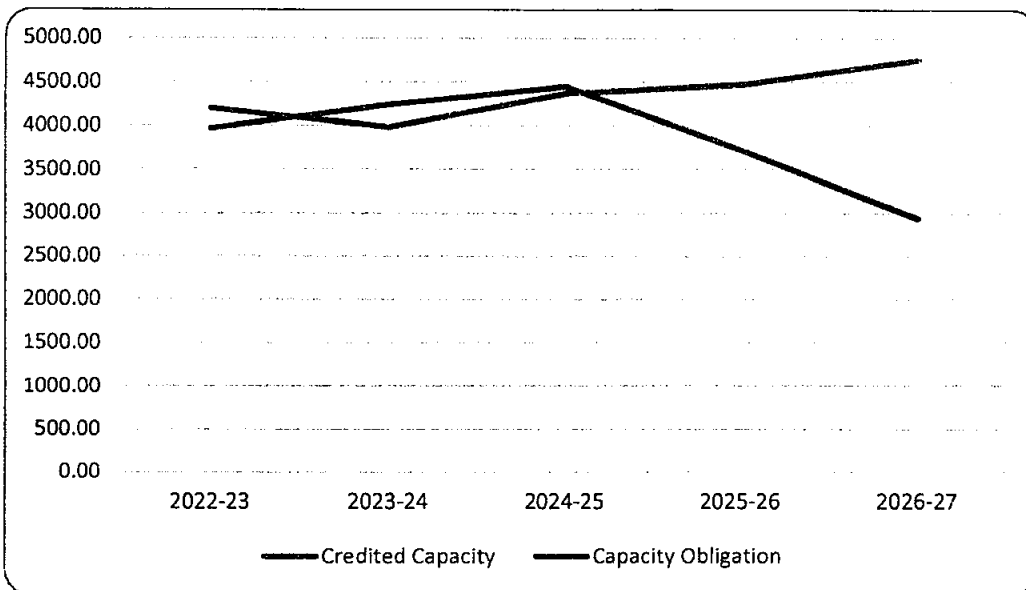
It can be observed from the above figure that IESCO is compliant in all years as its Credited Capacity covers 100% of its Capacity Obligation in all years.

Figure 3: Results for LESCO



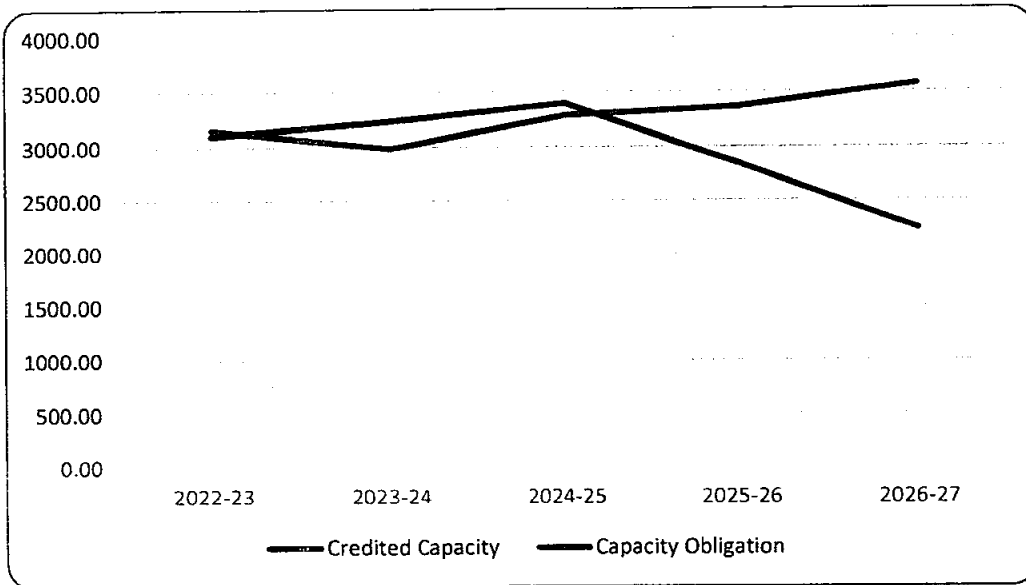
It can be observed from the above figure that LESCO is found Minor Non-Compliant in year 2023-2024 as its Credited Capacity covers 97.36% of its Capacity Obligation in that year. For the all other years, it is found Compliant.

Figure 4: Results for FESCO



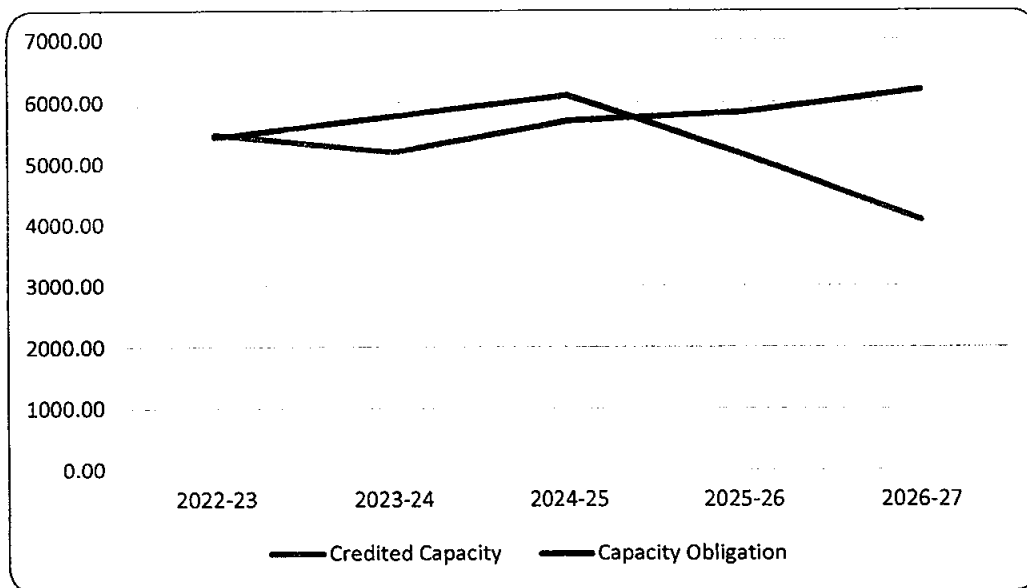
It can be observed from the above figure that FESCO is Serious Non-Compliant in year 2023-24 as its Credited Capacity only covers 94.75% of its Capacity Obligation in that year. For all other years, it is found Compliant as its Credited Capacity covers 98-100% of its Capacity Obligation.

Figure 5: Results for GEPCO



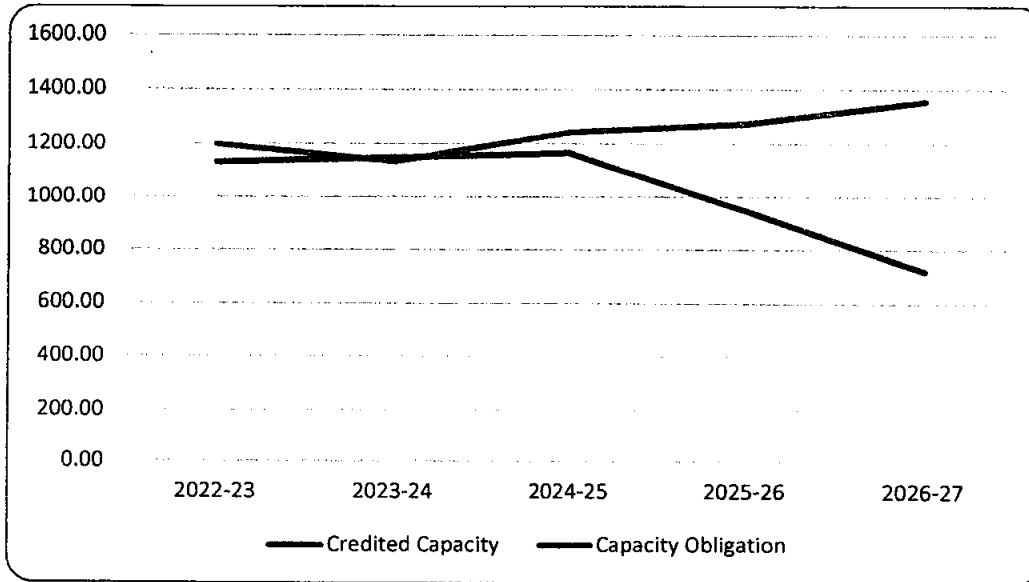
It can be observed from the above figure that GEPCO is found Serious Non-Compliant in year 2023-2024 as its Credited Capacity only covers 93.49% of its Capacity Obligation in that year. It is found Minor Non-Compliant in year 2024-2025 as its Credited Capacity only covers 97.68% of its Capacity Obligation in that year For all other years, it is found Compliant as its Credited Capacity covers 98-100% of its Capacity Obligation.

Figure 6: Results for MEPCO



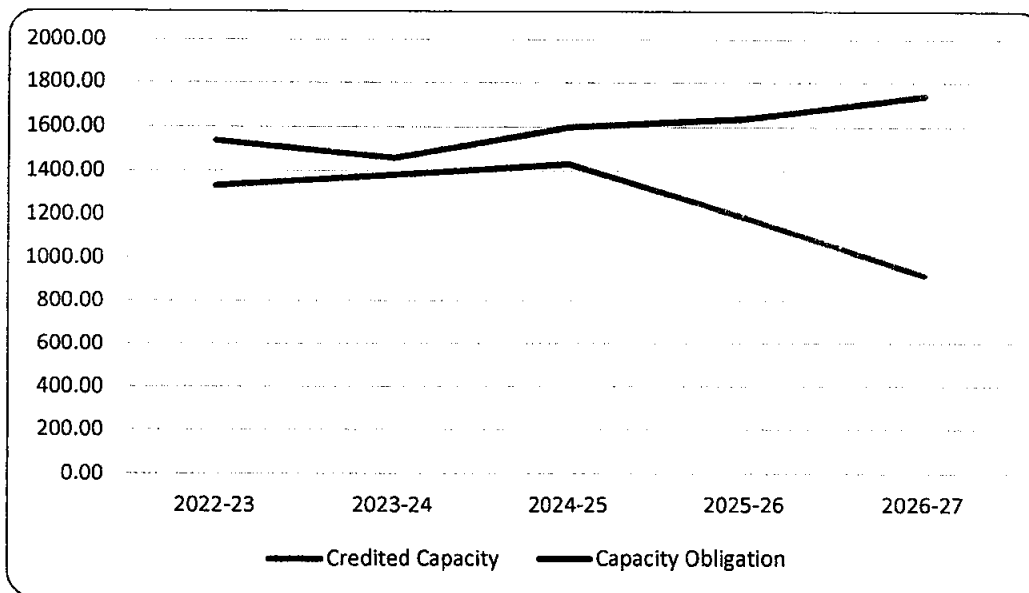
It can be observed from the above figure that MEPCO is found Serious Non-Compliant in years 2023-2024 and 2024-2025 as its Credited Capacity only covers 91.03% and 94.33% respectively of its Capacity Obligation in those years. For other years, it is found Compliant.

Figure 7: Results for SEPCO



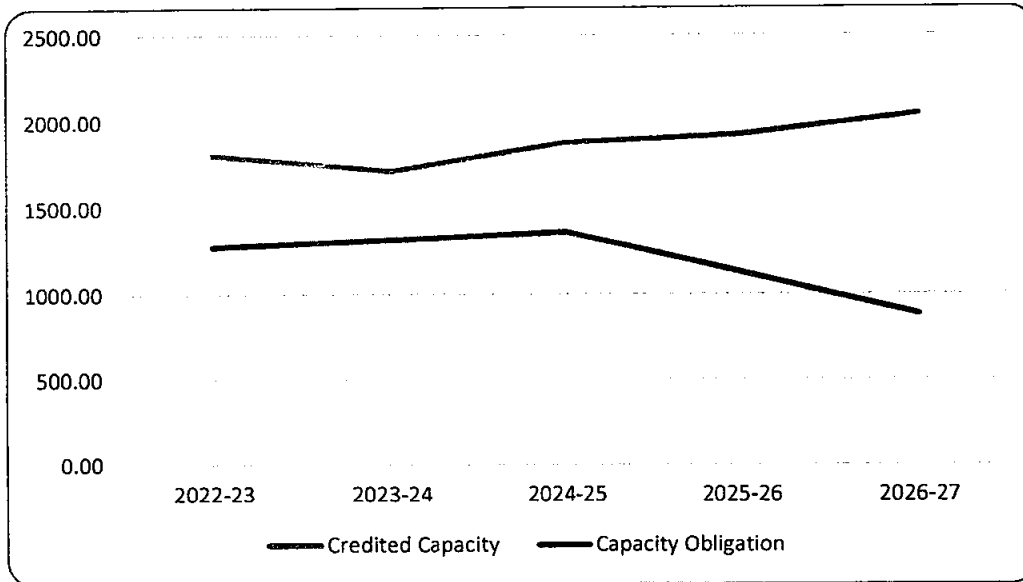
It can be observed from the above figure that SEPCO is compliant in all years as its Credited Capacity covers 98-100% of its Capacity Obligation in all years.

Figure 8: Results for HESCO



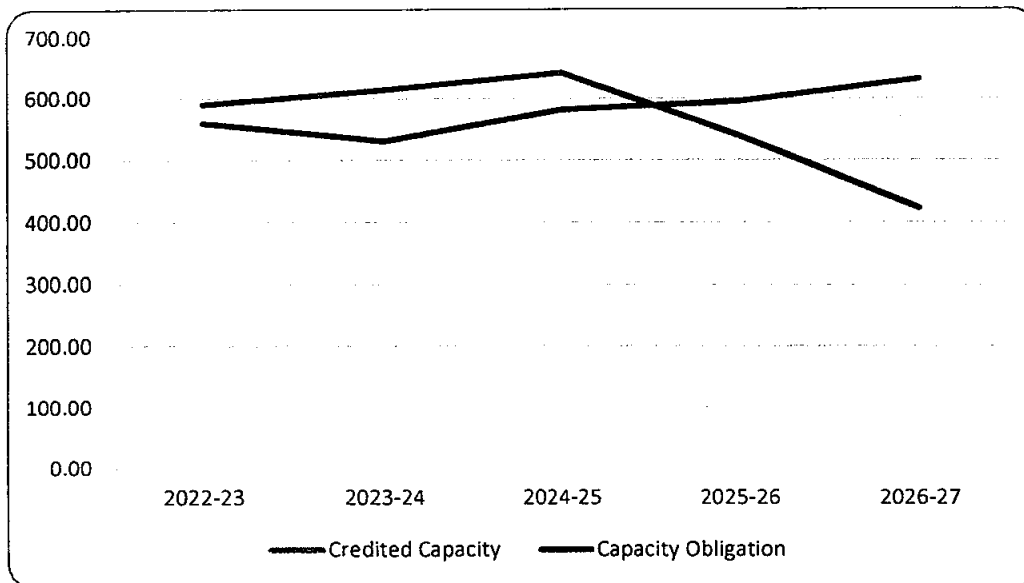
It can be observed from the above figure that HESCO is compliant in all years as its Credited Capacity covers 100% of its Capacity Obligation in all years.

Figure 9: Results for QESCO



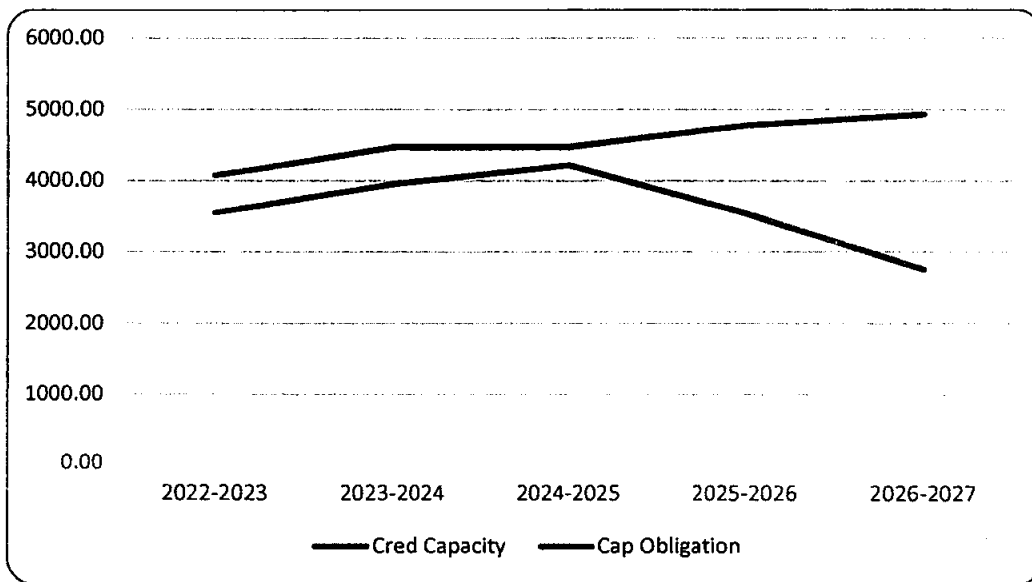
It can be observed from the above figure that QESCO is compliant in all years as its Credited Capacity covers 100% of its Capacity Obligation in all years.

Figure 10: Results for TESCO



It can be observed from the above figure that TESCO is found Serious Non-Compliant in years 2022-2023, 2023-2024 and 2024-25 as its Credited Capacity only covers 94.78%, 86.25% and 90.41% respectively of its Capacity Obligation in those years. For the remaining years, it is found Compliant. However, it is clarified that with the revised Allocation Factors as recommended under the trial run, this situation is resolved.

Results for KE



It can be observed from the above figure that KE is compliant in all years as its Credited Capacity covers 100% of its Capacity Obligation in all years.

Part 5: Stakeholders Feedback

The following were the comments received after circulating the capacity obligation report based on 2021 IGCEP and 2021 PMS. These comments and responses are kept in mind while preparing this updated capacity obligation report.

Summary of the comments received from GEPCO:

1. "Commercial Allocation Factors" should be reviewed and rationalized as despite surplus capacity available in the system, GEPCO is declared "Serious Non-compliant".
2. The year 2021-22 should be excluded from Ex-Ante and evaluated on Ex-Post basis according to the methodology mentioned in the Commercial Code Chapter 18.
3. The definition of current year should be reviewed and to consider the "Current year is financial year immediately next following the year in which compliance with eh capacity obligation is being verified". This will provide time window to the market participant in violation for buying surplus available with over compliant market participant even within the legacy contracts.
4. It is suggested that the reserve margin may be dispensed with for the calculation of capacity obligation as the capacity obligation is already based on non-coincidental peak as per MTLF of each market participant and the allocated capacity is based on proportional sum of MDI, further adjusted for the availability factor.
5. The Capacity Obligation Report has been prepared on calendar year basis, which is inconsistent aligned with all other regulatory processes. Medium Term Demand Forecast, which forms the basis of the Capacity Obligation, IGCEP, Business Plan, consumer end tariff and all other regulatory processes are based upon fiscal year, Therefore, the Capacity Obligations shall also be determined on fiscal year basis.

CPPA-G agrees with the recommendations of the GEPCO and has amended the report for observation no 2, 3, and 5 above already. The other recommendations will be presented to the Authority in the final test run report for consideration.

Summary of the comments received from SEPCO:

SEPCO has compared the values used by the Market Operator from the Commercial Metering System with the values of their LDI meter system and has commented that the values don't match.

It is hereby clarified that CPPA-G uses the hourly consumption data from the CDP meters integrated with the SMS of the MSP which is different than the one reported by the LDI meters which are installed for management purposes only. Therefore, these two values shall not be compared.

Consultative Sessions:

One consultative session was arranged for MEPCO MIRAD team on their request in which the results were explained in detail and their queries were answered briefly. Another consultative session was arranged for all power sector entities including NEPRA in which the results were presented and queries were addressed.

Part 6: Recommendations

Based on the results, the following recommendations are formulated:

- i. It has been observed that DISCOs which are compliant with their Capacity Obligations have sufficient excess amount of capacity in each year to share with the DISCOs that are in shortages. Since all DISCOs have jointly procured generation through the Legacy Contracts, therefore, a mechanism shall be worked out to allocate the excess amount to those DISCOs which are in need of it. This will avoid the risk of obligating DISCOs to procure further capacity when there is sufficient margin available in the already contracted capacity. If such re-allocation is allowed, then all DISCOs shall be compliant with their Capacity Obligations.
- ii. A recommendation has been made from GEPCO to abolish the reserve margin as the Capacity Obligations are based on the individual peaks of the DISCOs which is already greater than the coincidental system peak. CPPA-G doesn't agree with this recommendation as historical data shows that the coincidence factor is above 95% and the revised Firm Capacity calculation methodology (recommended in the trial run report) also enhances the Firm Capacity of thermal generators, hence some reserve margin need to be there for supply adequacy.

Part 6: Ex-post Compliance with Capacity Obligations

In accordance with the provisions of the Commercial Code (Clause 9.1.1.3), the results of the Balancing Mechanism for Capacity shall be used to verify the ex-post compliance with the Capacity Obligation of each Market Participant. The Balancing Mechanism for Capacity has already been executed for year 2022 as per provisions of the Commercial Code.

For ex-post compliance with the Capacity Obligations, the Capacity demanded, and Capacity provided by Market Participants is evaluated based on the results of the BMC. If the Capacity Provided (Self-owned or through purchase in Contracts) by a Market Participant is greater than the Capacity Demanded (Self consumption or through selling Capacity in Contracts) by such Market Participant, then such Market Participants will have a positive imbalance. If the Capacity Provided by a Market Participant is less than the Capacity Demanded by such Market Participant, then such Market Participants will have a negative imbalance and will pay for the shortage as per the mechanism described in the Commercial Code.

The Market Participants with negative capacity imbalances are further evaluated in such a manner that where they were able to purchase the shortage in the BMC or not. If there was enough surplus Capacity in the Balancing Mechanism for Capacity to supply to all market participants which are in shortage and the Market Participants are willing to pay the amount as determined by the Market Operator, then the ex-post compliance of such market participants will be considered fulfilled. However, if there is not enough surplus capacity in the BMC to fulfill the requirement of the market participants having negative capacity imbalances or if the market participants having negative capacity imbalances don't submit the requisite security covers to the Market Operator, then the Capacity Obligations of such market participants will be considered as not fulfilled and all such non-compliance will be categorized as Serious-Non-Compliance and will be dealt accordingly.

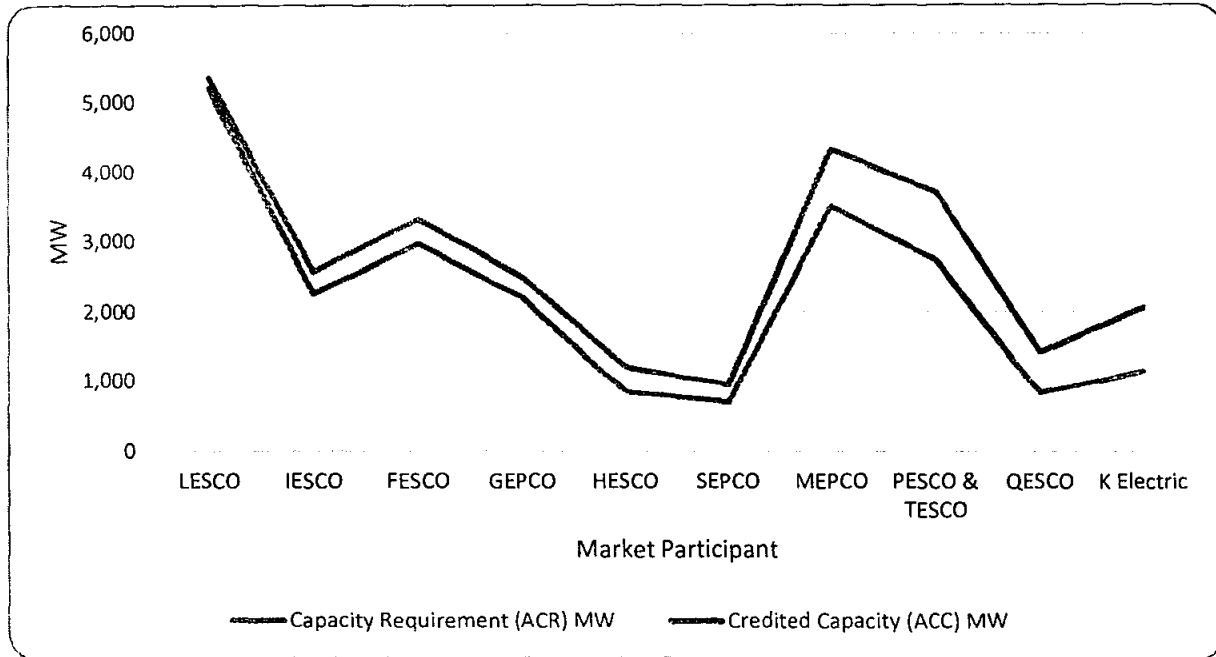
The results of the Balancing Mechanism for Capacity for the year 2022 are given in Error! Reference source not found. below.

Table 19: Results of BMC

#.	Market Participant ID	Market Participant Name	Capacity Requirement (ACR)	Credited Capacity (ACC)	Capacity Balance (CB)
			MW	MW	MW
1	2	LESCO	5,210	5,362	152
2	3	IESCO	2,256	2,579	323
3	4	FESCO	2,969	3,326	358
4	5	GEPCO	2,198	2,496	297
5	6	HESCO	848	1,217	370
6	7	SEPCO	690	948	258
7	8	MEPCO	3,510	4,335	826
8	9,11	PESCO & TESCO	2,736	3,718	982
9	10	QESCO	835	1,428	593
10	12	K Electric	1,157	2,050	893

The above results have been presented in graphical form in **Figure 11** below.

Figure 11: Results of BMC and Ex-Post Compliance with Capacity Obligations



Since all the Market Participants are in a positive imbalance in the Balancing Mechanism of Capacity and there is no Market Participant with negative capacity imbalances. So, all the Market Participants are compliant in Ex-post Compliance with Capacity Obligations as depicted in **Table 20** below.

Table 20: Ex-Post Compliance with Capacity Obligations

Market #.	Market Participant ID	Market Participant Name	Ex-Post Compliance 2022
1	2	LESCO	Compliance
2	3	IESCO	Compliance
3	4	FESCO	Compliance
4	5	GEPCO	Compliance
5	6	HESCO	Compliance
6	7	SEPCO	Compliance
7	8	MEPCO	Compliance
8	9	PESCO	Compliance
9	10	TESCO	Compliance
10	11	QESCO	Compliance

Annexure-A

Table 21: Abbreviations of Project's names

Abbreviation	Project Name
APL	Atlas Power Limited
AGL	Attock Generation Limited
CPH	China Power Hub
EPQL	Engro Power Qadriabad Limited
EPTL	Engro Power Thar Limited
FPCDL	Foundation Power Company Dharki Limited
HPGCL	Halmore Power Generation Company Limited
HSR	Huaneng Shandong Ruyi
LPTL	Liberty Power Tech Limited
NEL	Narowal Energy Limited
HBS	Hawali Bahadur Shah
NCPL	Nishat Chunian Power Limited
NPL	Nishat Power Limited
OPCL	Orient Power Company Limited
PQEPC	Port Qasim Electric Power Company
QATPL	Quaid e Azam Thermal Power Limited
SPL	Saif Power Limited
SECL	Sapphire Energy Company Limited
AEL	Altern Energy Limited
LIBERTY	TNB Liberty
FKPCL	Fauji Kabirwala Power Company Limited
KEL	Kohinoor Energy Limited
HCPC	Habibullah Coastal Power Company

S.NO	Total Course Categories	No. of courses Held	Participants/ Trainees attended the course		Total
			Successful	Un-Successful	
01	Promotion / Up-gradation Courses	36	503		503
02	Safety / Refresher courses including CPR	33	387		387
03	Regular Courses (Capacity building)	03	31		31
04	IT Computer course for Admin Staff (affiliated with Trade Testing Board (TTB))	--	44	--	44
05	Others	--	--		
Grand Total		67	965	--	965

S.NO	Total Course Categories	No of courses Held	Participant Training attended (in number)		Total
			Successful	Un-Successful	
01	Promotion / Up-gradation Courses	36	503		503
02	Safety / Refresher courses including CPR	33	387		387
03	Regular Courses (Capacity building)	03	31		31
04	IT Computer course for Admin Staff (affiliated with Trade Testing Board (TTB))	1	44		44
05	Others				
Grand Total		67	965		965

S.NO	Total Course Categories	No. of courses Held	Participants / Trainees attended the course		Total
			Successful	Un-Successful	
01	Promotion / Up-gradation Courses	24	320		320
02	Safety / Refresher courses including CPR	9	69		69
03	Regular Courses (Capacity building)	3	13		13
04	IT Computer course for Admin Staff (affiliated with Trade Testing Board (TTB))	2	44		44
05	Others				
Grand Total		38	446		446

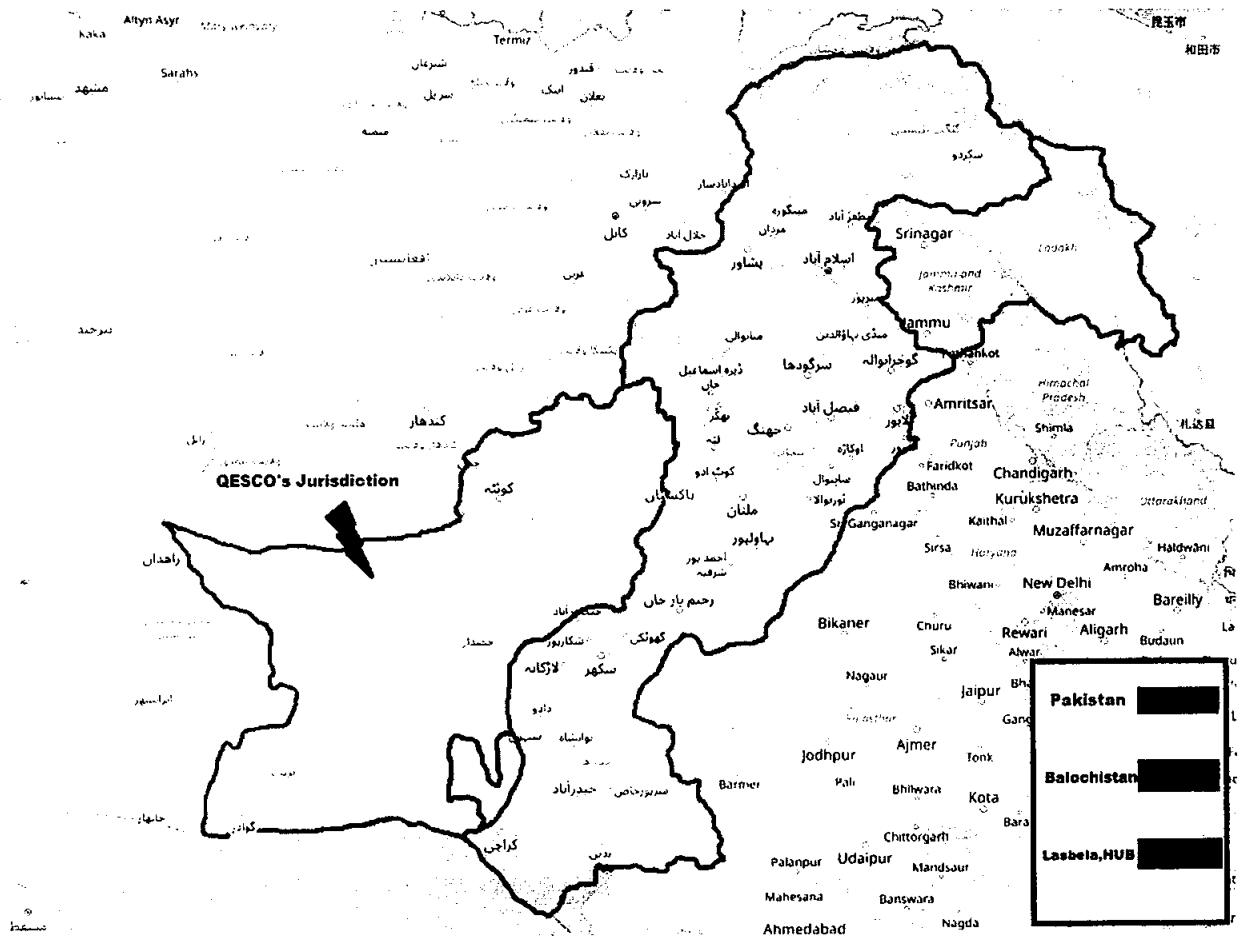
TRAINING

- In the year 2021-22 following No of Officers & Officials went under different trainings.
 - 10 X Officer were nominated for Junior Management 03 Course /Middle Management Course/ 02 Senior Management Course at Islamabad
 - 4 x Officer were nominated for Sector Specific Course at Faisalabad
 - 32x Officers were also nominated for short courses/trainings/workshops.
 - 301 x Officials were nominated for RTC QESCO

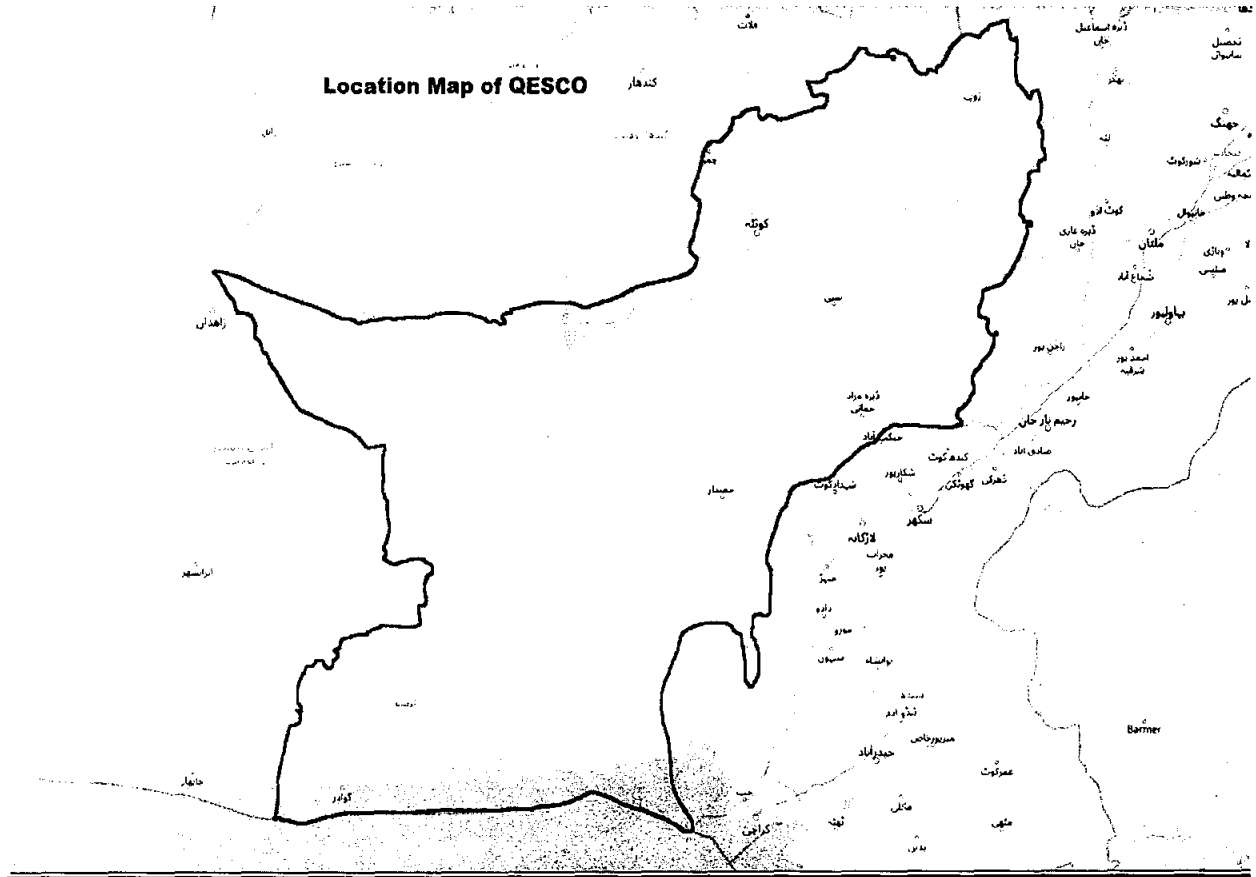
PROPOSED SERVICE TERRITORY

The Details of Territory (i.e. Geographical Boundaries) within which the Licensee/Quetta Electric Supply Company Limited is Authorized to Conduct its Distribution Activities/Services.

**Location
Of the Licensee/QESCO on the
Map of Pakistan**



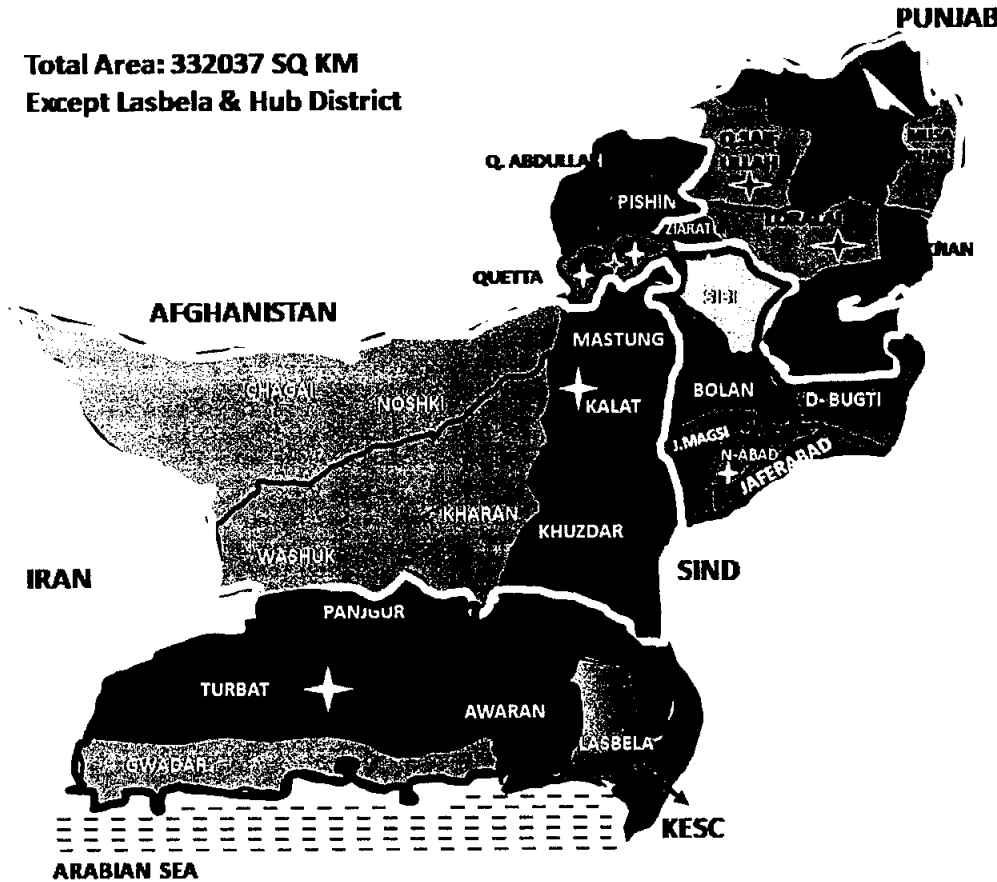
Location
of the Licensee/QESCO without Lasbela, Hub



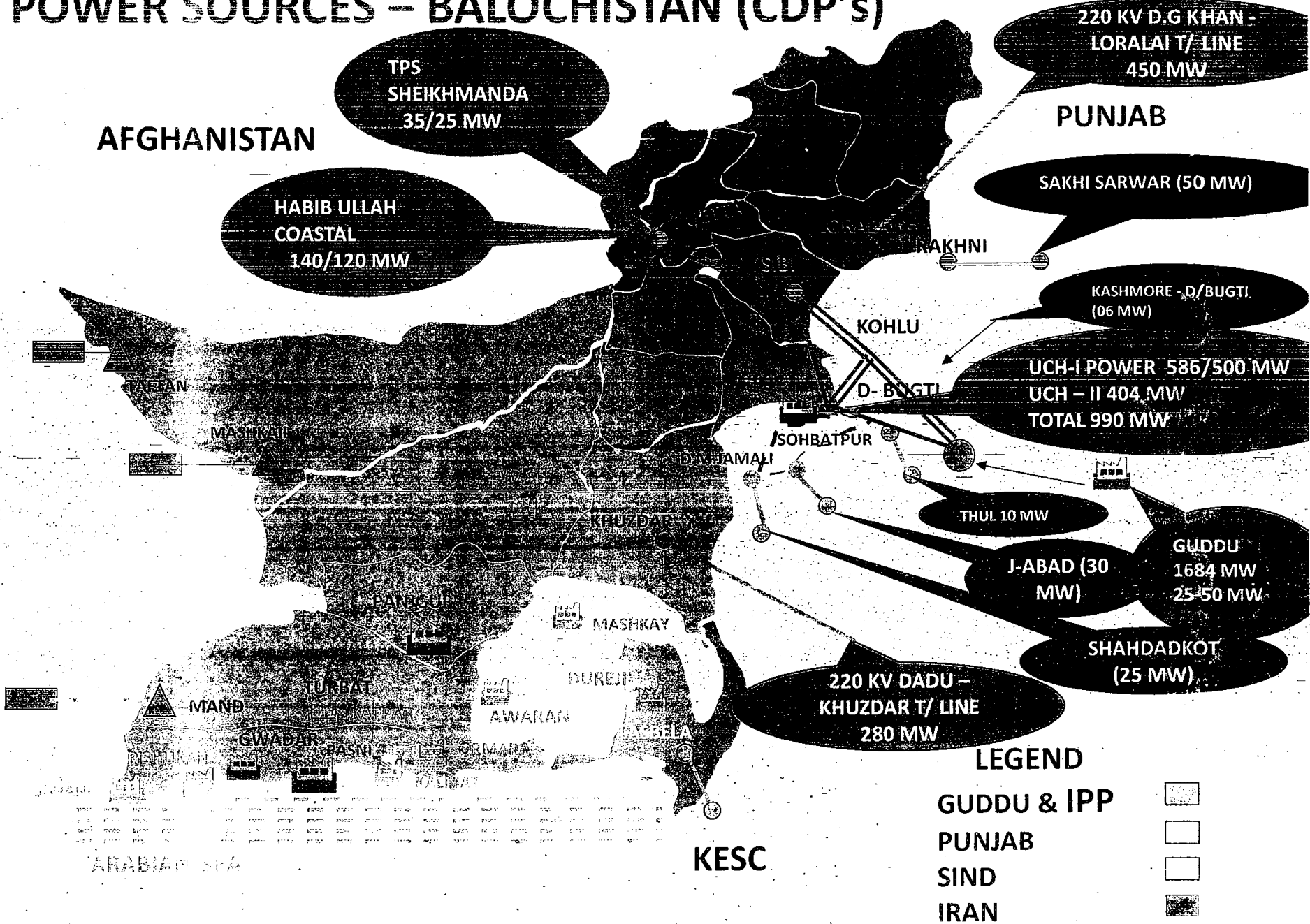
Detail of Territory (Geographical Boundaries, Districts)
Within which the Licensee/QESCO is Authorized to Conduct
Distribution Activities/Services

AREA OF JURISDICTION OF QESCO

Total Area: 332037 SQ KM
Except Lasbela & Hub District



POWER SOURCES – BALOCHISTAN (CDP's)



AFGHANISTAN

PUNJAB

ARABIAN SEA

KESC

LEGEND

- GUDDU & IPP
- PUNJAB
- SIND
- IRAN

TPS
SHEIKHMANDA
35/25 MW

HABIB ULLAH
COASTAL
140/120 MW

220 KV D.G KHAN -
LORALAI T/ LINE
450 MW

SAKHI SARWAR (50 MW)

KASHMORE - D/BUGTI,
(06 MW)

UCH-I POWER 586/500 MW
UCH - II 404 MW
TOTAL 990 MW

THUL 10 MW

J-ABAD (30
MW)

GUDDU
1684 MW
25-50 MW

SHAHADKOT
(25 MW)

220 KV DADU -
KHUZDAR T/ LINE
280 MW

AREA OF JURISDICTION OF QESCO

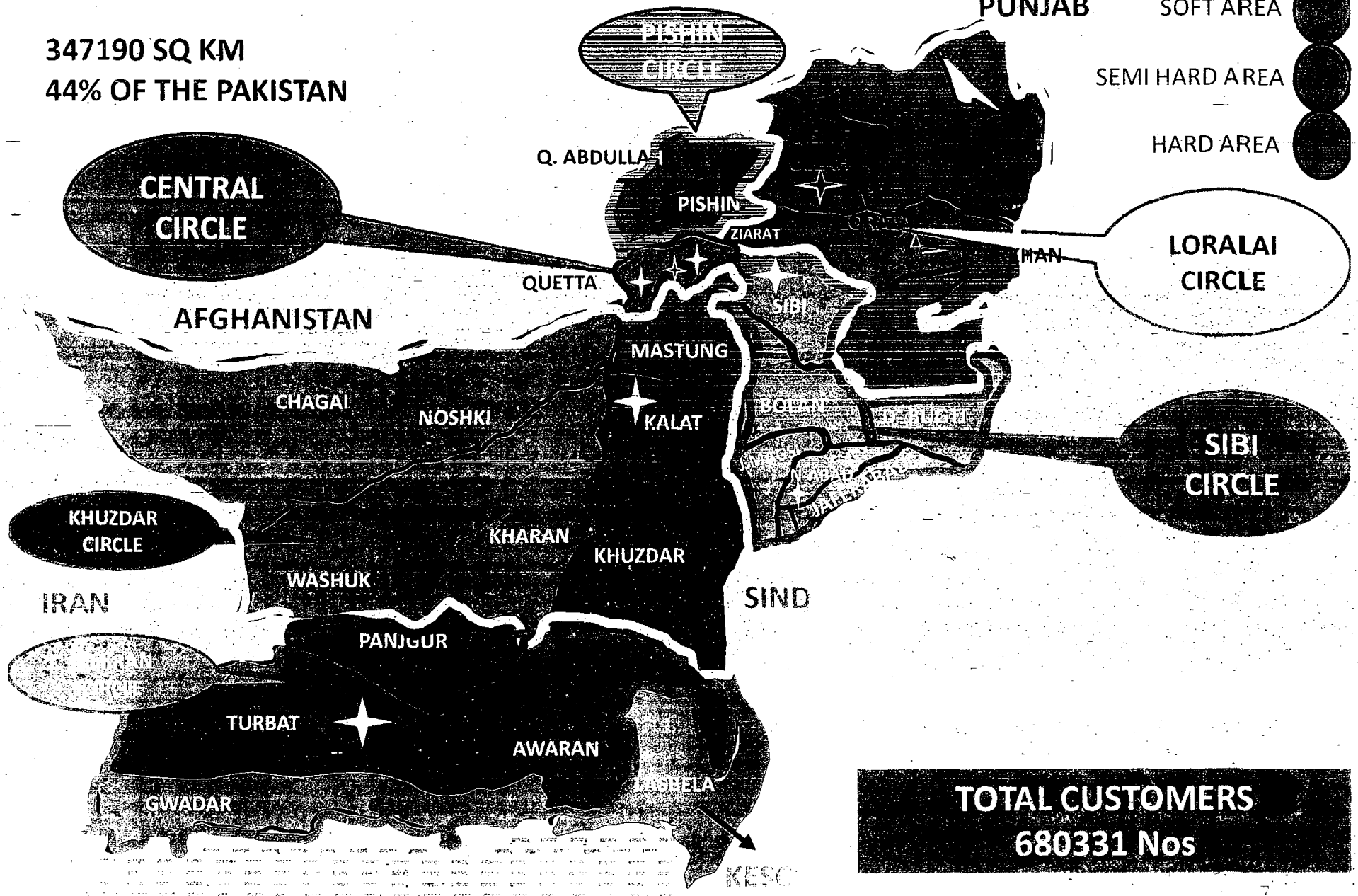
347190 SQ KM
44% OF THE PAKISTAN

PUNJAB

SOFT AREA

SEMI HARD AREA

HARD AREA



LORALAI
CIRCLE

CENTRAL
CIRCLE

SIBI
CIRCLE

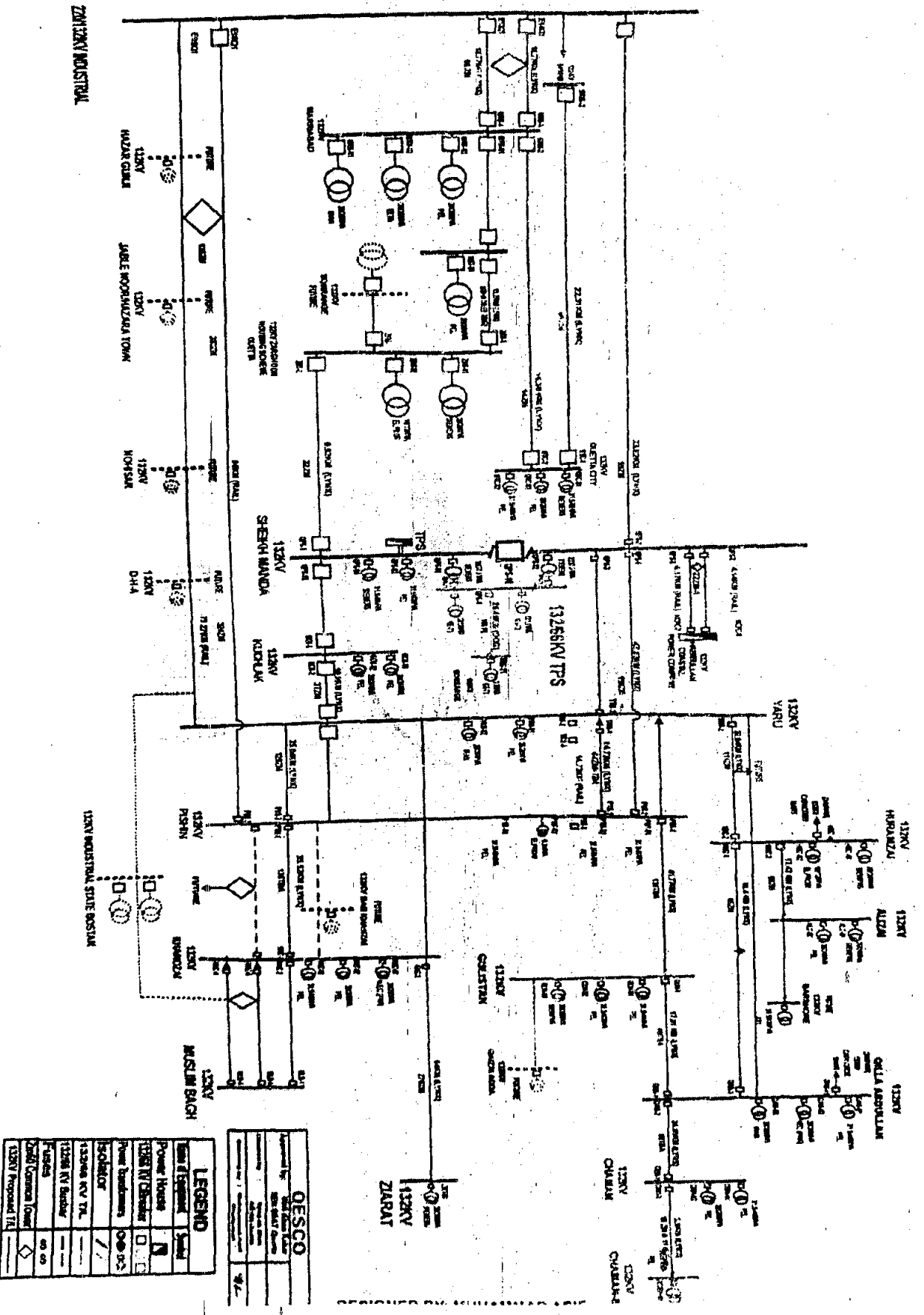
KHUZDAR
CIRCLE

TURBAT
CIRCLE

**TOTAL CUSTOMERS
680331 Nos**

ARABIAN SEA

INTERLINK SYSTEM OF SS&T DIVISION GSO QESCO QUETTA



QESCO	
Project Name	SS&T Division GSO
Project No.	SS&T/2011/001
Date	15/11/2011
Scale	1:1
Sheet No.	11/1

LEGEND	
Line	132kV
Power House	
132kV Transformer	
Power Transformer	
Breaker	
132kV KV T/L	
132kV KV Busbar	
Fused	
132kV Common Line	
132kV Proposed T/L	




QUETTA ELECTRIC SUPPLY COMPANY LIMITED

Office of the Chief Executive Officer
QESCO, Zarghoon Road, Quetta Cantt:
Tele: 081-9202211

STATEMENT - DECLARATION

Ref: No.NEpra/R/LAS-100/8774 Dated: 11/04/2023 (Received on 02.5.23)

Apropos to the letter under caption i.r.o observation mentioned at XV, I being Chief Executive Officer QESCO Quetta as authorized signatory stated that, *the QESCO has never been refused to grant of license under the Act.*


Engr. Abdul Karim Jamali
Chief Executive Officer
QESCO Quetta

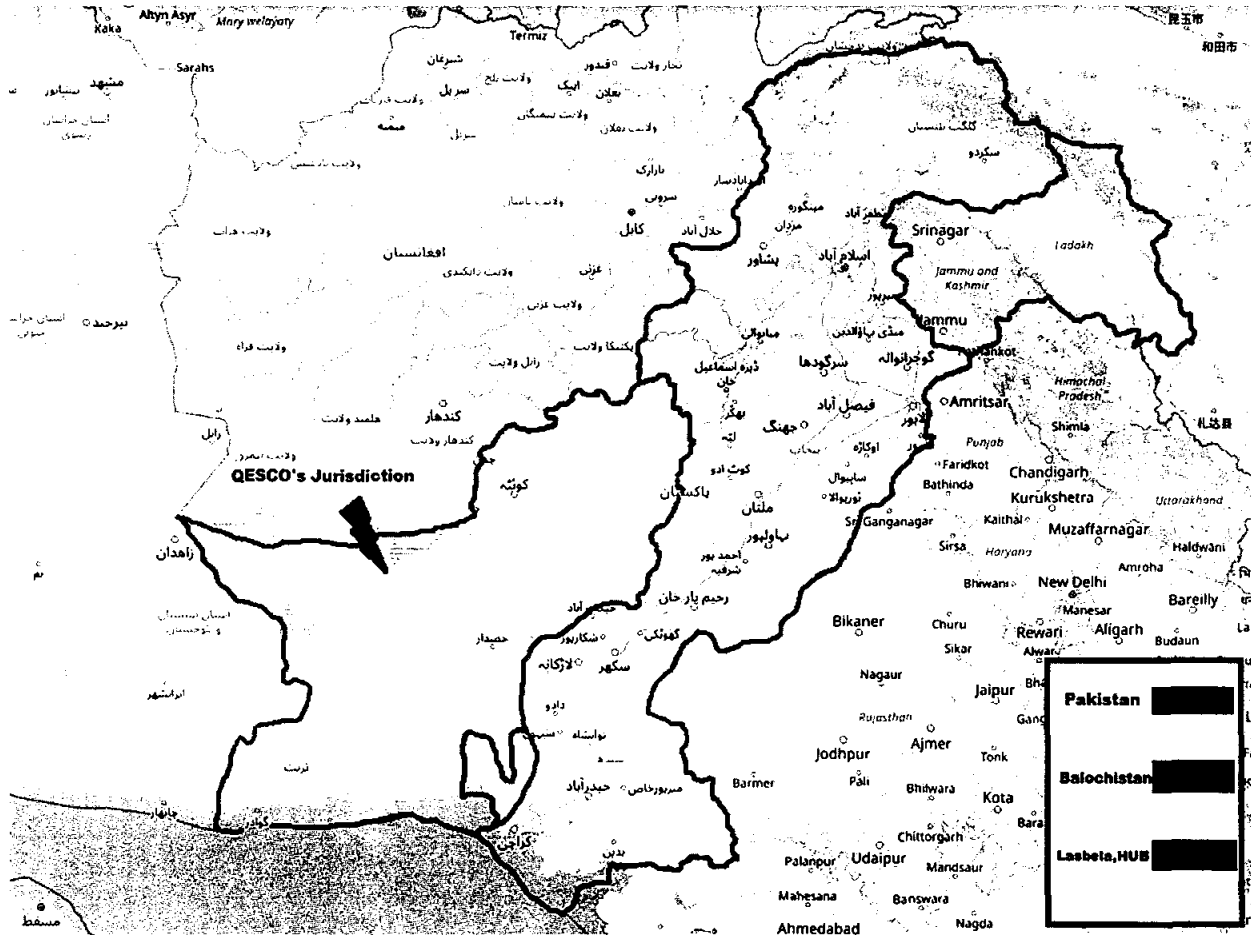
Sr. No	Cat Code	Cat Name	Cat Type	PMS CAT Name
1	1	A-1(a)	Domestic	Domestic
2	2	A-1(a)	Domestic	Domestic
3	3	A-1(b)-TOU	Domestic	Domestic
4	4	A-2(a)	Commercial\	Commercial
5	5	A-2(b)	Commercial\	Commercial
6	6	A-2c	Commercial\	Commercial
7	7	B-1	Small Industry	Small Industry
8	8	B-1	Small Industry	
9	9	B-2(b)-TOU	Small Industry	Small Industry
10	10	B-2(a)	M&L Industry	M&L Industry
11	12	B-2(b)-TOU	M&L Industry	M&L Industry
12	13	B-3-TOU	M&L Industry	
13	14	B-3-TOU	M&L Industry	M&L Industry
14	19	C-1(a)	Bulk	Bulk
15	25	C-1(b)	Bulk	Bulk
16	26	C-1(c)-TOU	Bulk	Bulk
17	28	C-2(a)	Bulk	Bulk
18	29	C-2(b)-TOU	Bulk	Bulk
19	45	D-1(b)-TOU	Tubewell	Tubewell
20	46	D-1(a)	Tubewell	Tubewell
21	51	D-1(b)-TOU	Agriculture	Tubewell
22	52	D-2	Agriculture	Tubewell
23	55	E-1(i)	Temp Domestic	Domestic
24	56	E-1(ii)	Temp Commercial	Commercial
25	58	E-2	Temp Industrial	Industrial
26	60	E-2a	Temp Industrial	
27	66	A-3a 4888	General/Others	Domestic
28	72	G-1	Street Light	Street Light
29	73	G-2	Street Light	Street Light
30	76	H-1	Housing Schemes	Domestic

DEMAND AND CONSUMPTION PATTERNS:

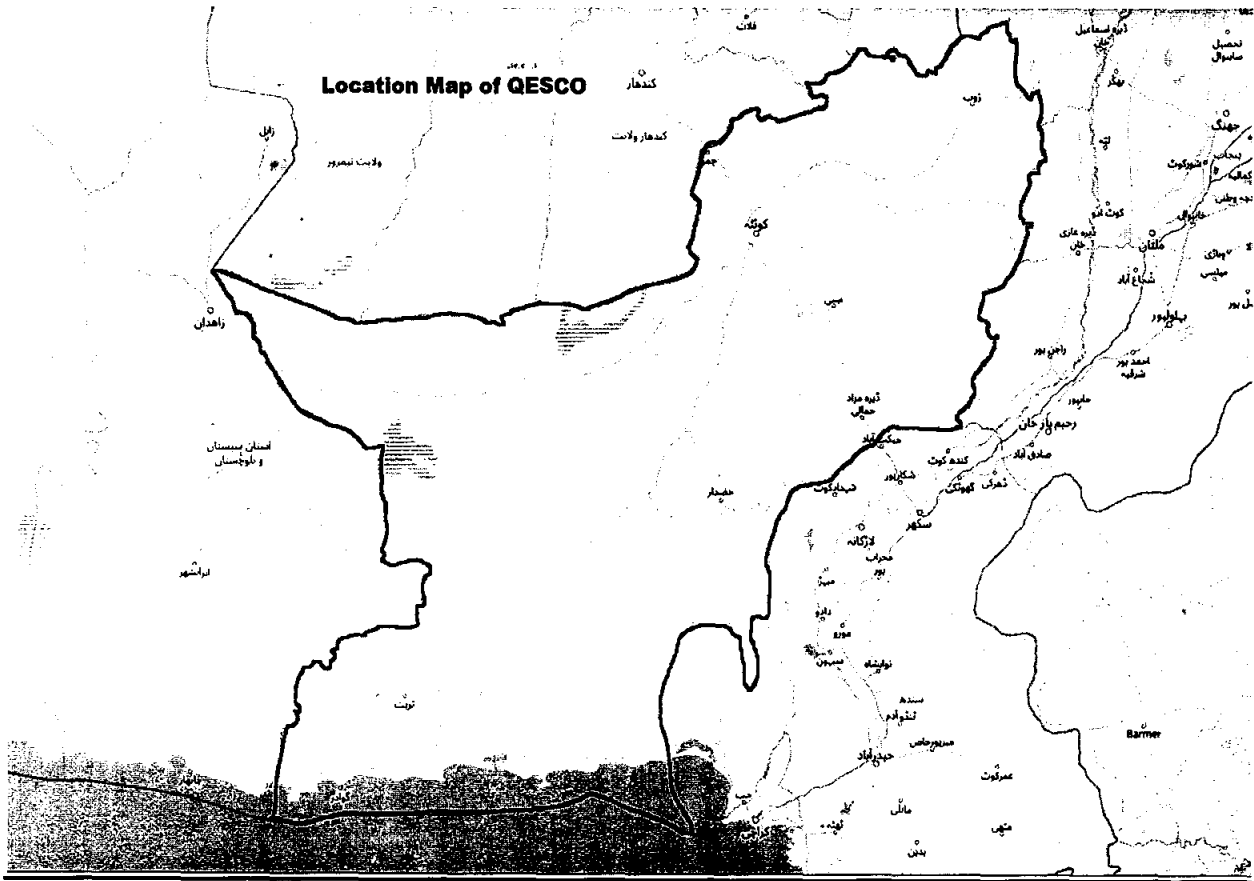
QESCO					
Year		Energy (GWh)		Peak Demand (MW)	
	Months	Actual	Projected	Actual	Projected
2021-22	July	639	-	1,070	-
	Aug	643	-	1,049	-
	Sep	579	-	1,020	-
	Oct	526	-	921	-
	Nov	513	-	996	-
	Dec	531	-	961	-
	Jan	461	-	940	-
	Feb	472	-	995	-
	Mar	549	-	966	-
	Apr	590	-	979	-
	May	627	-	999	-
	Jun	586	-	967	-
	Total	6,716	-	1,070	-
	2022-23	-	-	6,934	-
2023-24	-	-	7,131	-	1,166
2024-25	-	-	7,327	-	1,206
2025-26	-	-	7,556	-	1,247
2026-27	-	-	7,861	-	1,299
Total			36,809		

The Details of Territory (i.e. Geographical Boundaries) within which the Licensee/Quetta Electric Supply Company Limited is Authorized to Conduct its Distribution Activities/Services.

Location Of the Licensee/QESCO on the Map of Pakistan



Location
of the Licensee/QESCO without Lasbela,Hub



Detail of Territory (Geographical Boundaries, Districts)
Within which the Licensee/QESCO is Authorized to Conduct
Distribution Activities/Services

AREA OF JURISDICTION OF QESCO

Total Area: 332037 SQ KM
Except Lasbela & Hub District

