

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

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%	15%	5%	9%	32%	77%
PESCO	36%	45%	30%	36%	67%	129%
FESCO	12%	6%	-6%	-2%	20%	62%
LESCO	3%	8%	-3%	3%	26%	72%
GEPCO	14%	2%	-8%	-3%	18%	60%
MEPCO	24%	1%	-10%	-7%	13%	52%
HESCO	44%	15%	6%	12%	38%	89%
QESCO	71%	42%	30%	38%	71%	132%
TESCO	0%	-5%	-14%	-10%	10%	49%
SEPCO	37%	6%	-1%	7%	35%	88%
TOTAL	20%	11%	1%	5%	29%	75%

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%	17%	5%	11%	35%	79%
PESCO	36%	48%	31%	40%	71%	131%
FESCO	12%	8%	-1%	2%	26%	66%
LESCO	3%	9%	0%	6%	31%	75%
GEPCO	14%	3%	-2%	2%	24%	66%
MEPCO	24%	3%	-3%	-2%	19%	57%
HESCO	44%	17%	7%	15%	43%	93%
QESCO	71%	44%	30%	41%	75%	134%
TESCO	0%	2%	-2%	-1%	21%	61%
SEPCO	0%	8%	0%	10%	39%	91%
TOTAL	0%	13%	4%	9%	34%	79%

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-1), 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 NTDCCL 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 1224MWp. 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 documents, 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 DISCOsto 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 2-1 IESCO's Historical Demand and Forecast

IESCO					
Year		Energy (GWh)		Peak Demand (MW)	
2021-22	Months	Actual	Projected	Actual	Projected
	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)	
2021-22	Months	Actual	Projected	Actual	Projected
	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	-	2,526
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)	
2021-22	Months	Actual	Projected	Actual	Projected
	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 2-4LESCO's Historical Demand and Forecast

LESCO					
Year		Energy (GWh)		Peak Demand (MW)	
2021-22	Months	Actual	Projected	Actual	Projected
	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		5,578
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)	
2021-22	Months	Actual	Projected	Actual	Projected
	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)	
2021-22	Months	Actual	Projected	Actual	Projected
	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)	
2021-22	Months	Actual	Projected	Actual	Projected
	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	-	1,180
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)	
2021-22	Months	Actual	Projected	Actual	Projected
	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		1,129
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)	
2021-22	Months	Actual	Projected	Actual	Projected
	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

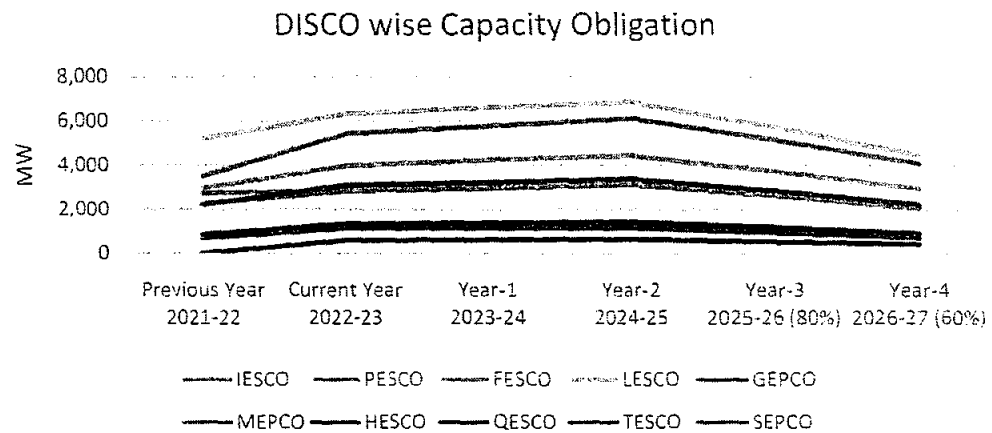


Figure 2-1 Capacity Obligations of XW-DISCOs for next 5 years

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.

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 MTLs, 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

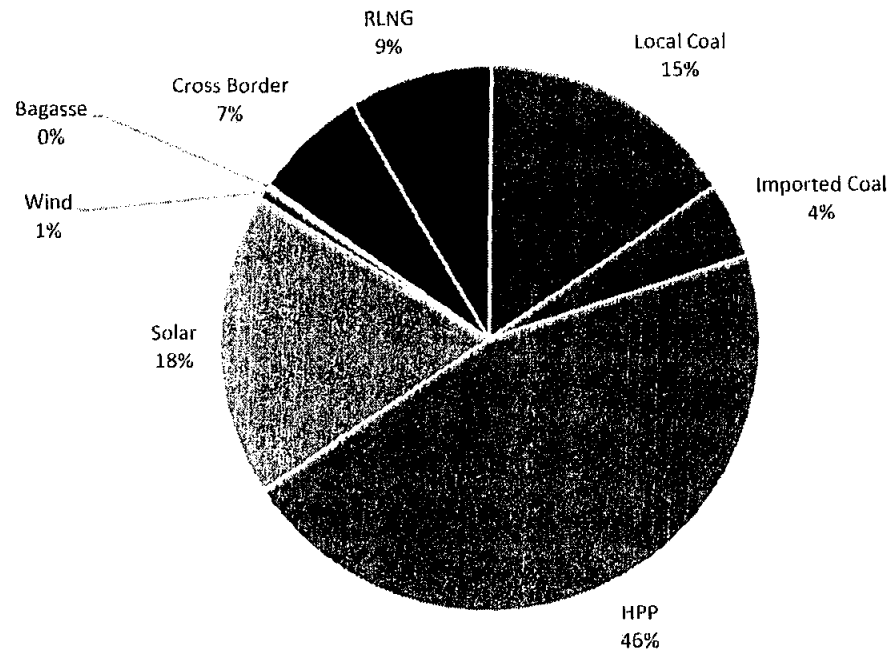


Figure 3-1 Technology Mix of Committed Generation

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
Solar	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-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%

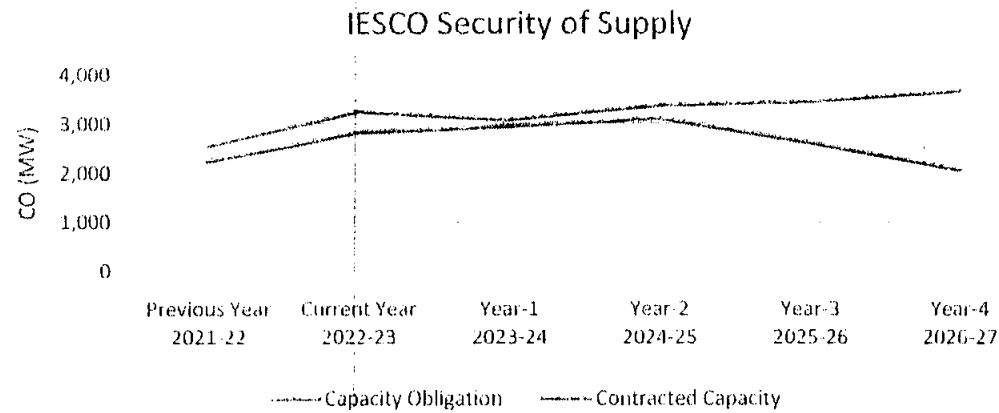


Figure 4-1 IESCO Security of Supply

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%

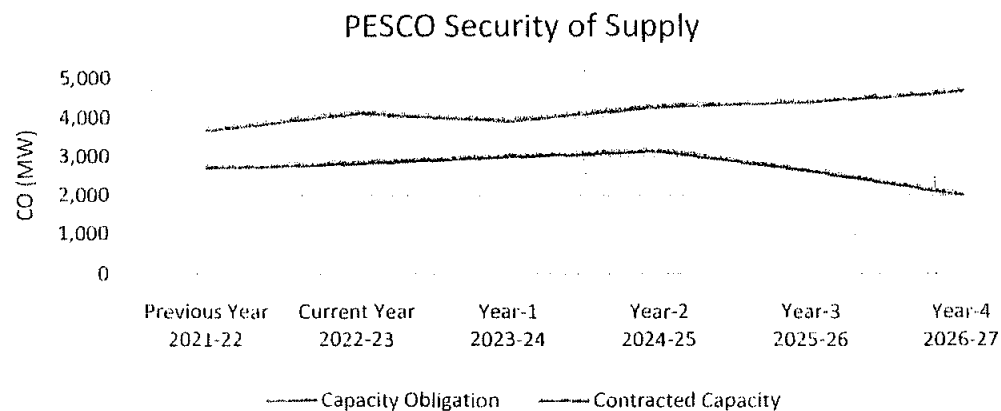


Figure 4-2 PESCO Security of Supply

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%

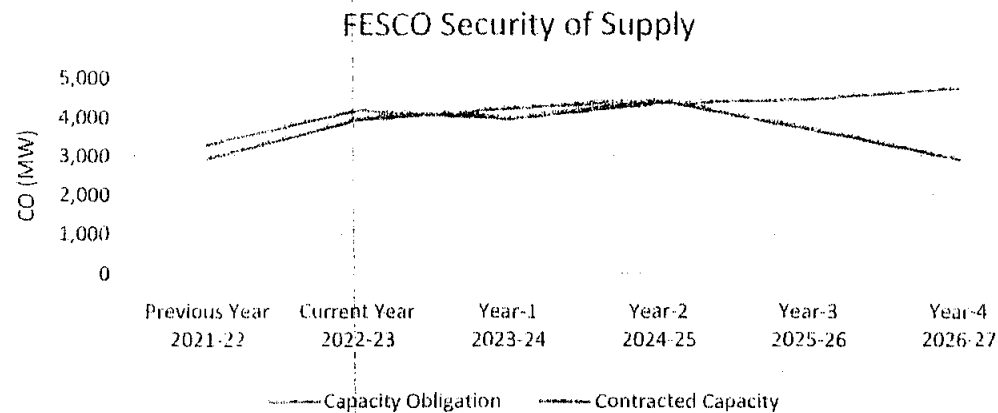


Figure 4-3 FESCO Security of Supply

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%

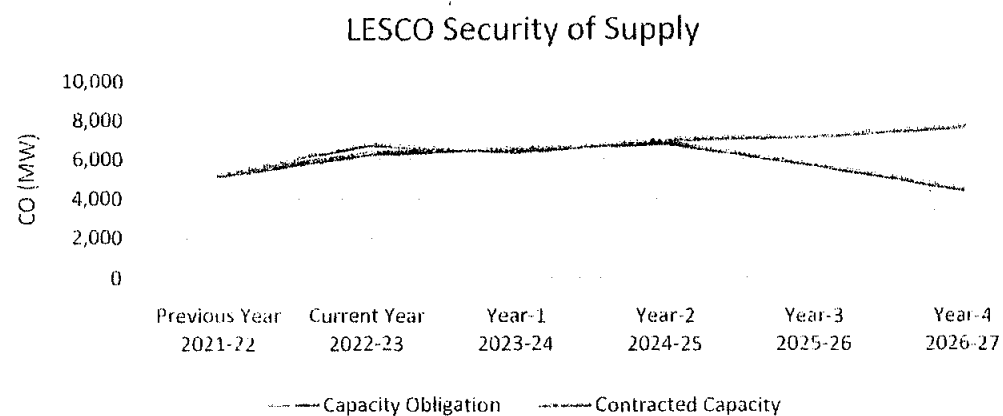


Figure 4-4 LESCO Security of Supply

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%

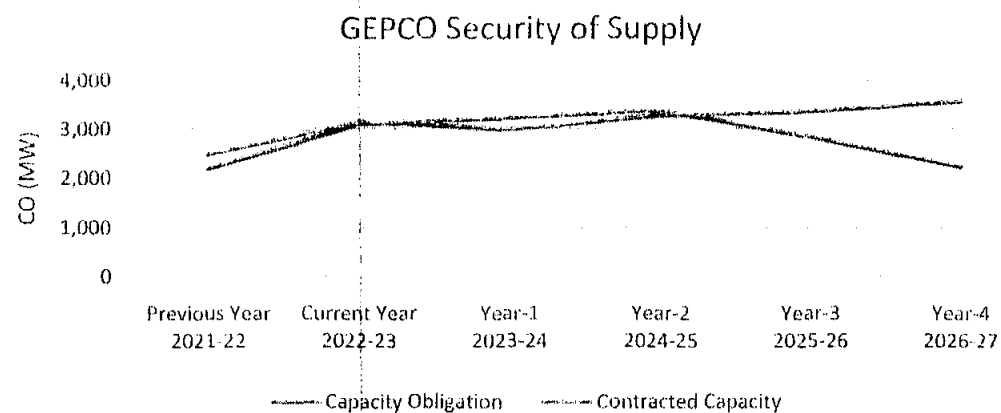


Figure 4-5 GEPCO Security of Supply

4.1.6. MEPCO:

Table 4-6 MEPCO's security of supply position

MEPCO							
	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	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%

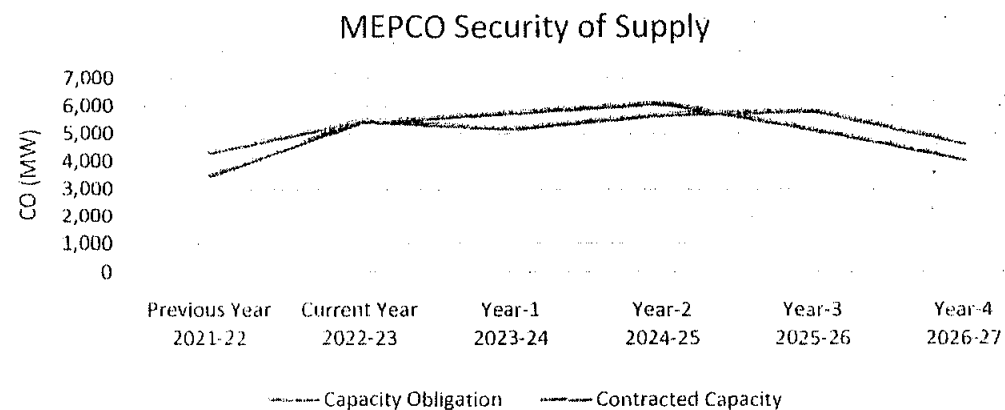


Figure 4-6 MEPCO Security of Supply

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%

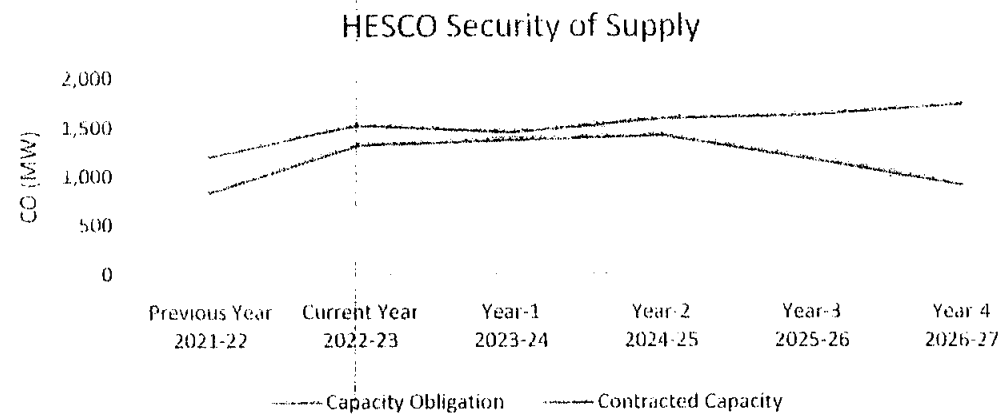


Figure 4-7 HESCO Security of Supply

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%

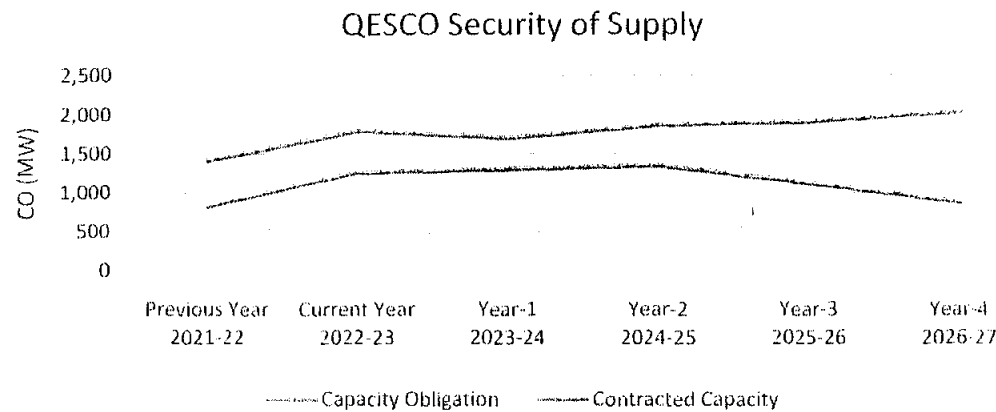


Figure 4-8 QESCO Security of Supply

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%

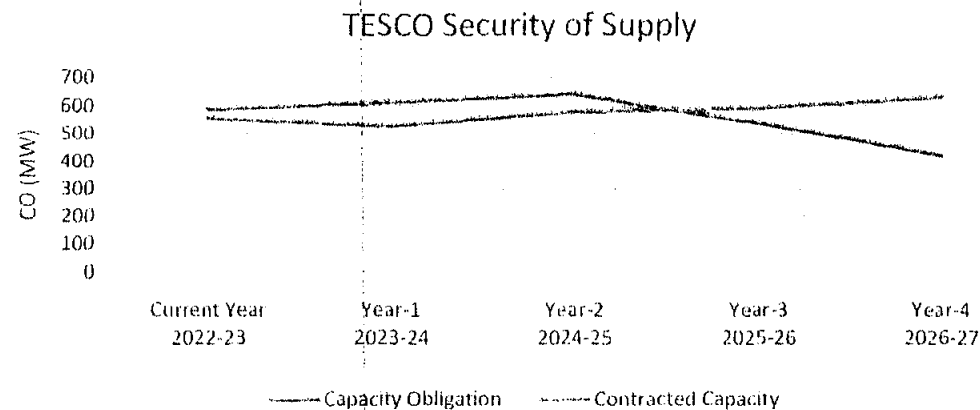


Figure 4-9 TESCO Security of Supply

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%

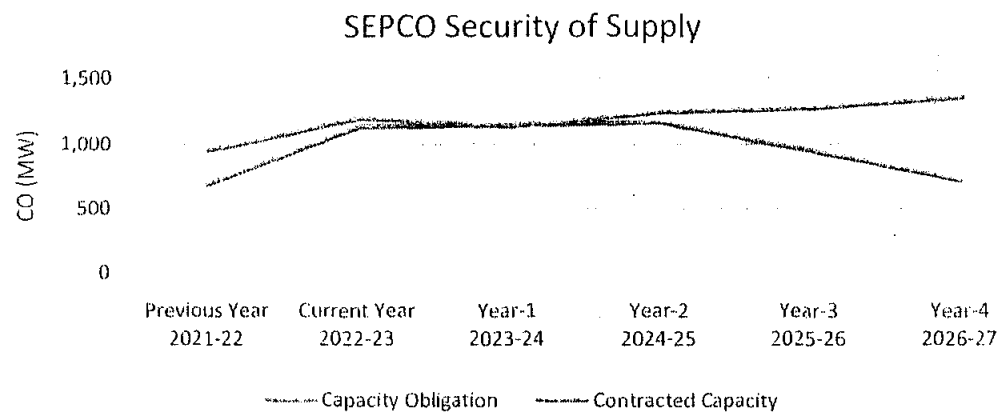


Figure 4-10 SEPCO Security of Supply

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%

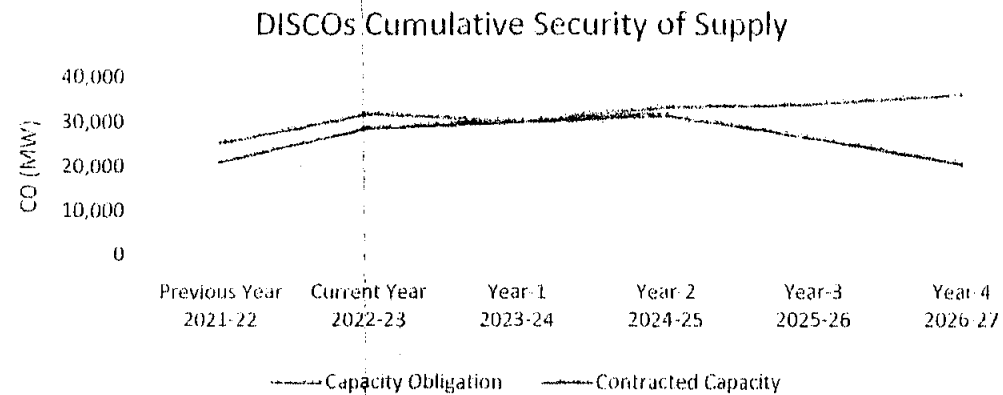


Figure 4-11XW-DISCOs cumulative Security of Supply

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
						FESCO	49
2	Solar	Committed/ Direct Contracting	620	136		LESCO	24
						GEPCO	46
						MEPCO	127
3	Wind	Committed/ Direct Contracting	50	15		HESCO	0
						QESCO	0
4	SPP	Committed/ Direct Contracting	10	9		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
						GEPCO	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 SoL.Rwrt to Additional Capacity Requirements	
1	Solar	Committed/ Direct Contracting	370	81	81	IESCO	8
						PESCO	10
						FESCO	11
						LESCO	17
						GEPCO	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		LESCO	0
						GEPCO	0
						MEPCO	0
3	Wind	Competitive Bidding	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
						GEPCO	49
						MEPCO	50
2	Bagasse	Committed/ Direct Contracting [HESCO]	6.5	6		HESCO	19
						QESCO	1
						TESCO	0
						SEPCO	12

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		LESCO	0
						GEPCO	0
						MEPCO	0
3	Wind	Competitive Bidding	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		LESCO	0
						GEPCO	0
						MEPCO	0
3	Wind	Competitive Bidding	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	HESCO	0
						PESCO	0
						FESCO	0
2	Solar Utility	Competitive Bidding	0	0		LESCO	0
						GEPCO	0
						MEPCO	0
3	Wind	Competitive Bidding	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
						GEPCO	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
						GEPCO	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	
						GEPCO	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
						GEPCO	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 Sol.Rwrt 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
						GEPCO	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

	Supply Demand	IESCO					
		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	30
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	1,642
10	CO Compliance (%) – Surplus / (Shortage)	14%	17%	5%	11%	35%	79%

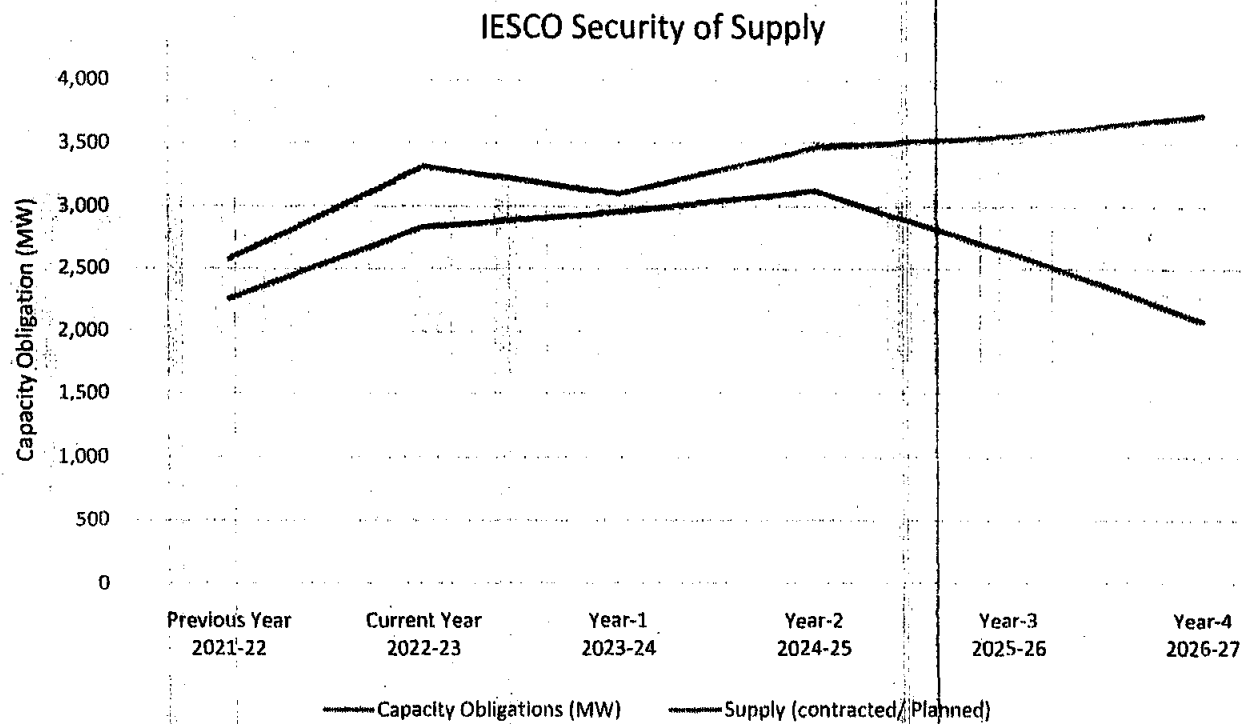


Figure 5-1 IESCOs Security of Supply including Proposed Procurement

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	38
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	2,695
10	CO Compliance (%) – Surplus / (Shortage)	36%	48%	31%	40%	71%	131%

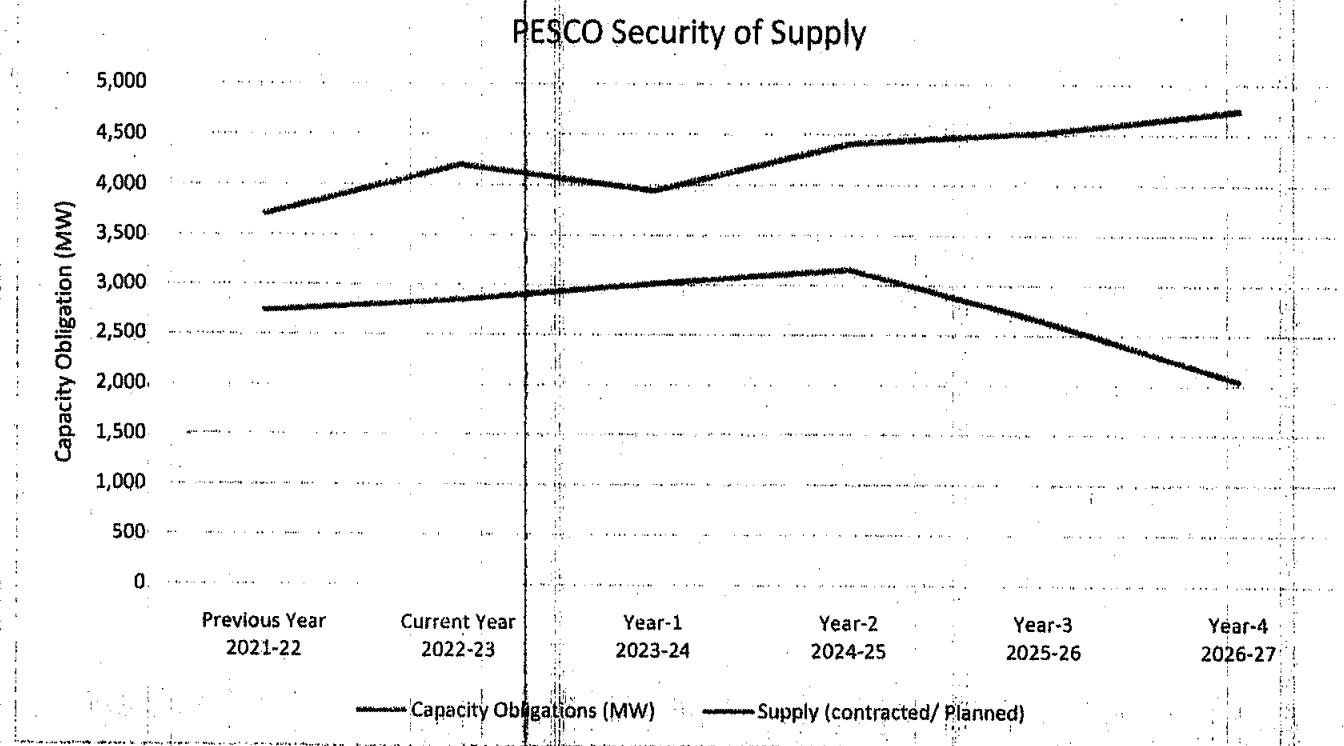


Figure 5-2 PESCOs Security of Supply including Proposed Procurement

5.2.3. FESCO:

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

	Supply Demand	FESCO					
		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	87
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	1,957
10	CO Compliance (%) – Surplus / (Shortage)	12%	8%	-1%	2%	26%	66%

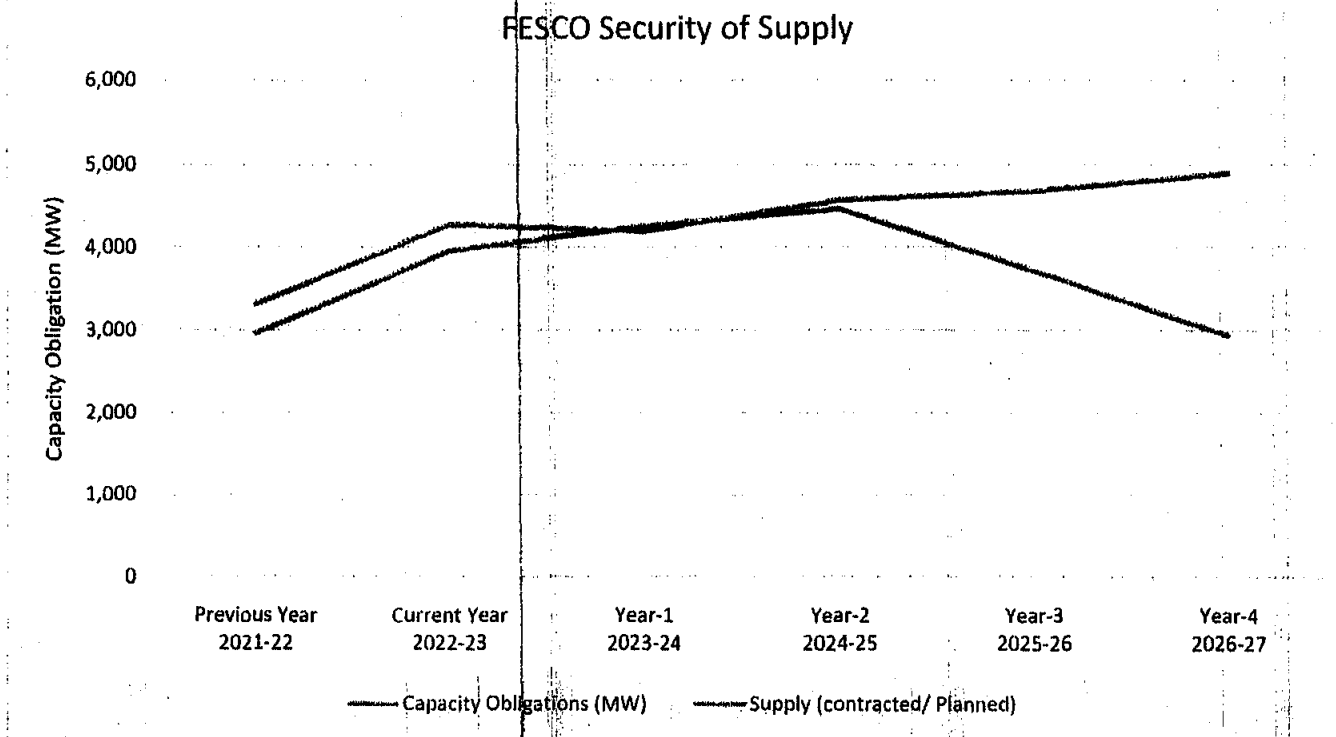


Figure 5-3 FESCOs Security of Supply including Proposed Procurement

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	86
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	3,356
10	CO Compliance (%) – Surplus / (Shortage)	3%	9%	0%	6%	31%	75%

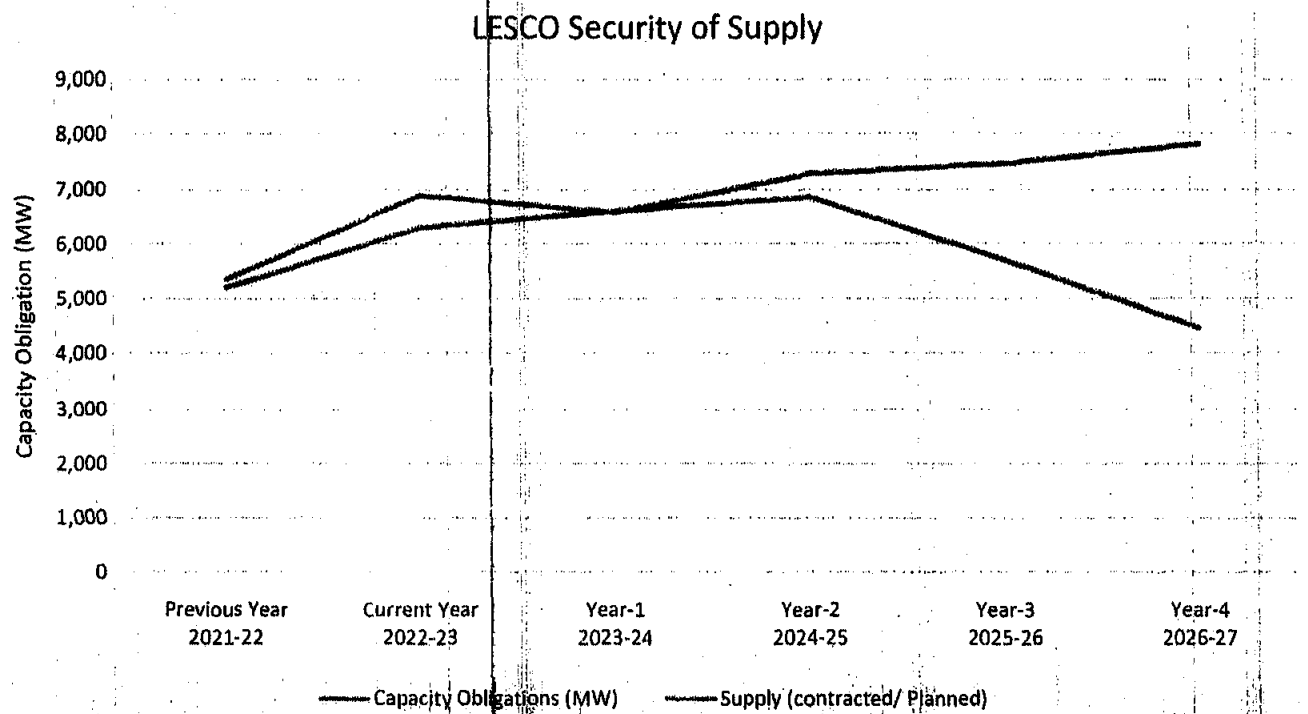


Figure 5-4 LESCOs Security of Supply including Proposed Procurement

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	75
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%

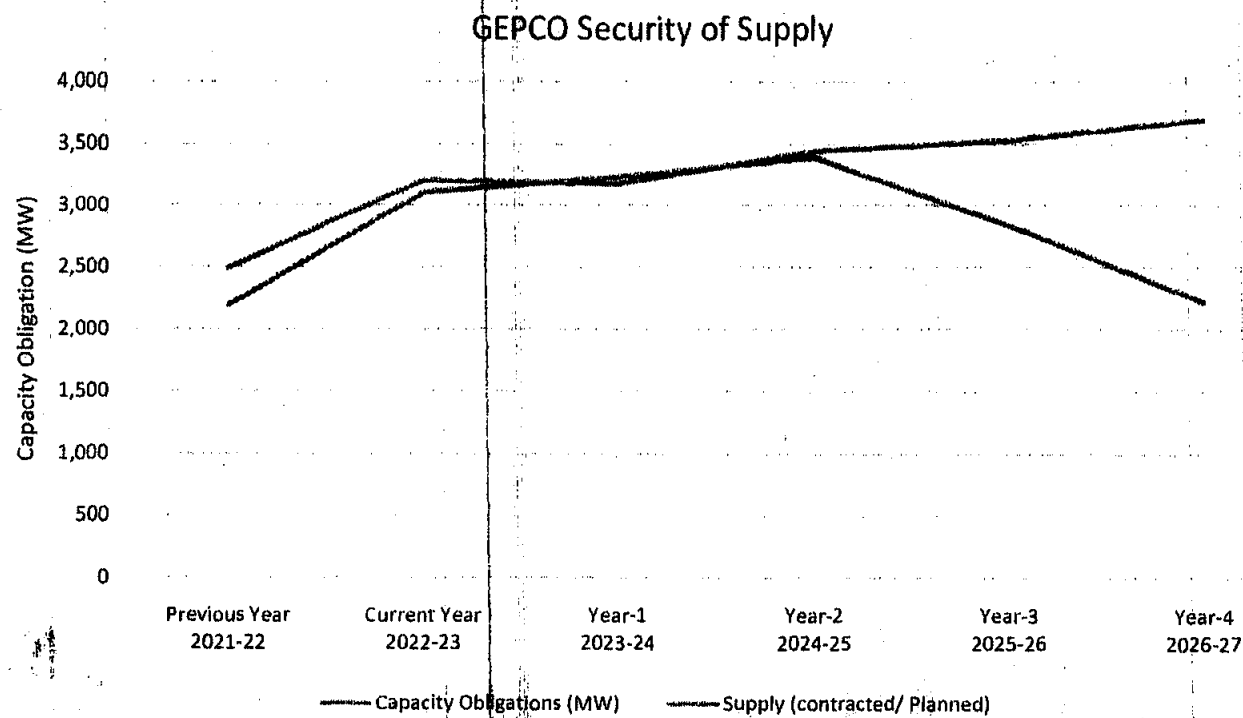


Figure 5-5 GEPCOs Security of Supply including Proposed Procurement

5.2.6. MEPCO:

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

	Supply Demand	MEPCO					
		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	177
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	2,335
10	CO Compliance (%) – Surplus / (Shortage)	24%	3%	-3%	-2%	19%	57%

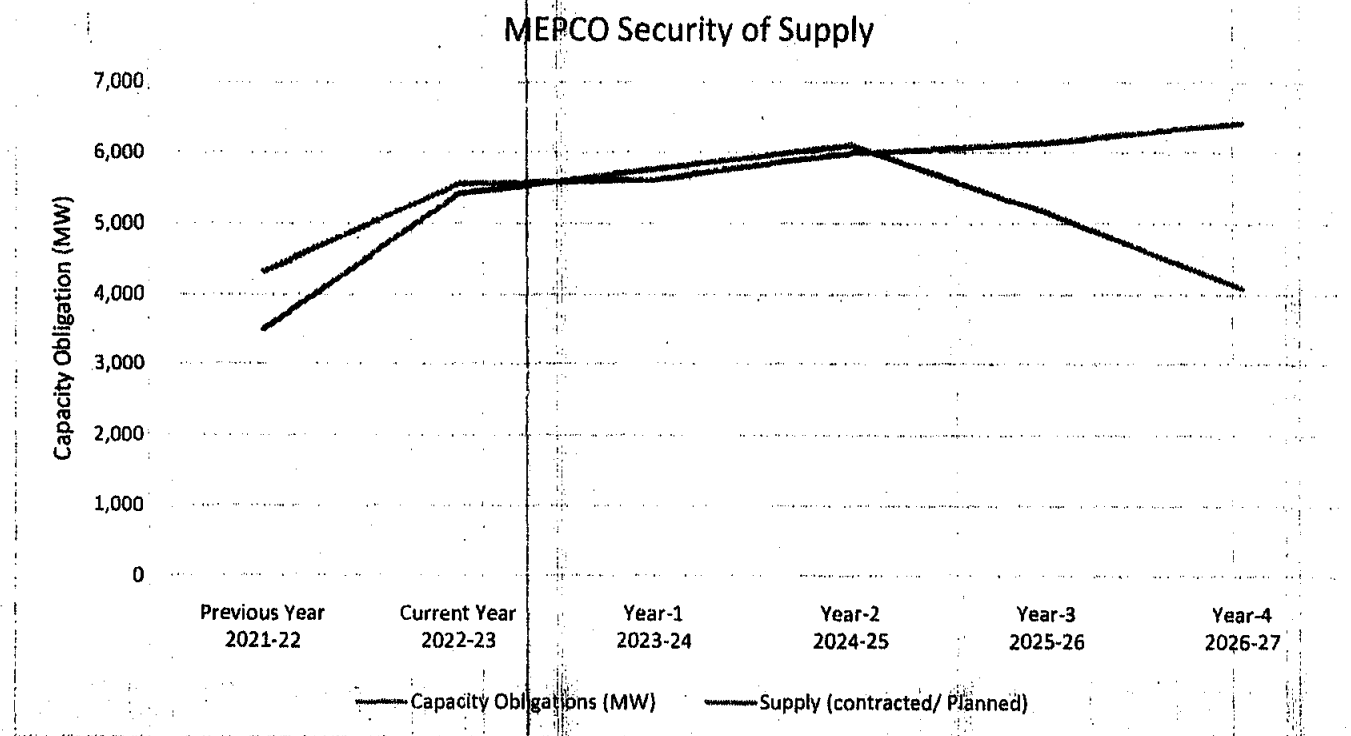


Figure 5-6 MEPCOs Security of Supply including Proposed Procurement

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	11
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	852
10	CO Compliance (%) – Surplus / (Shortage)	44%	17%	7%	15%	43%	93%

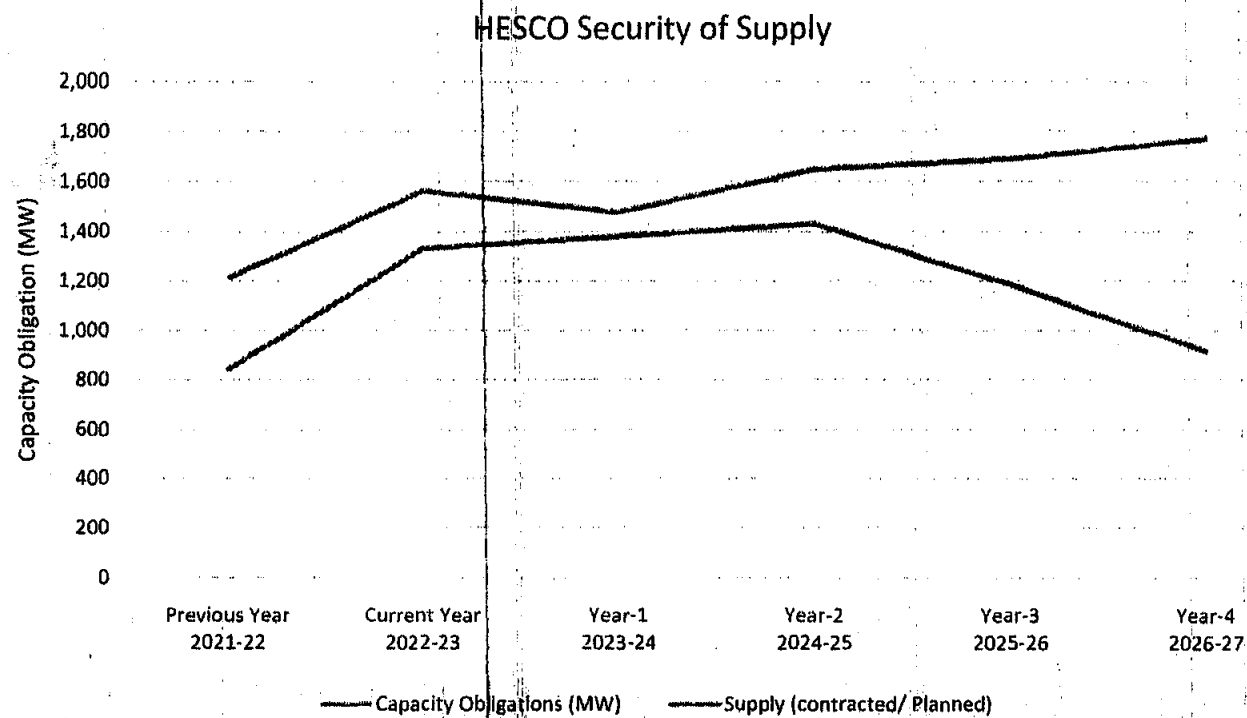


Figure 5-7 HESCOs Security of Supply including Proposed Procurement

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	17
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	1,181
10	CO Compliance (%) – Surplus / (Shortage)	71%	44%	30%	41%	75%	134%

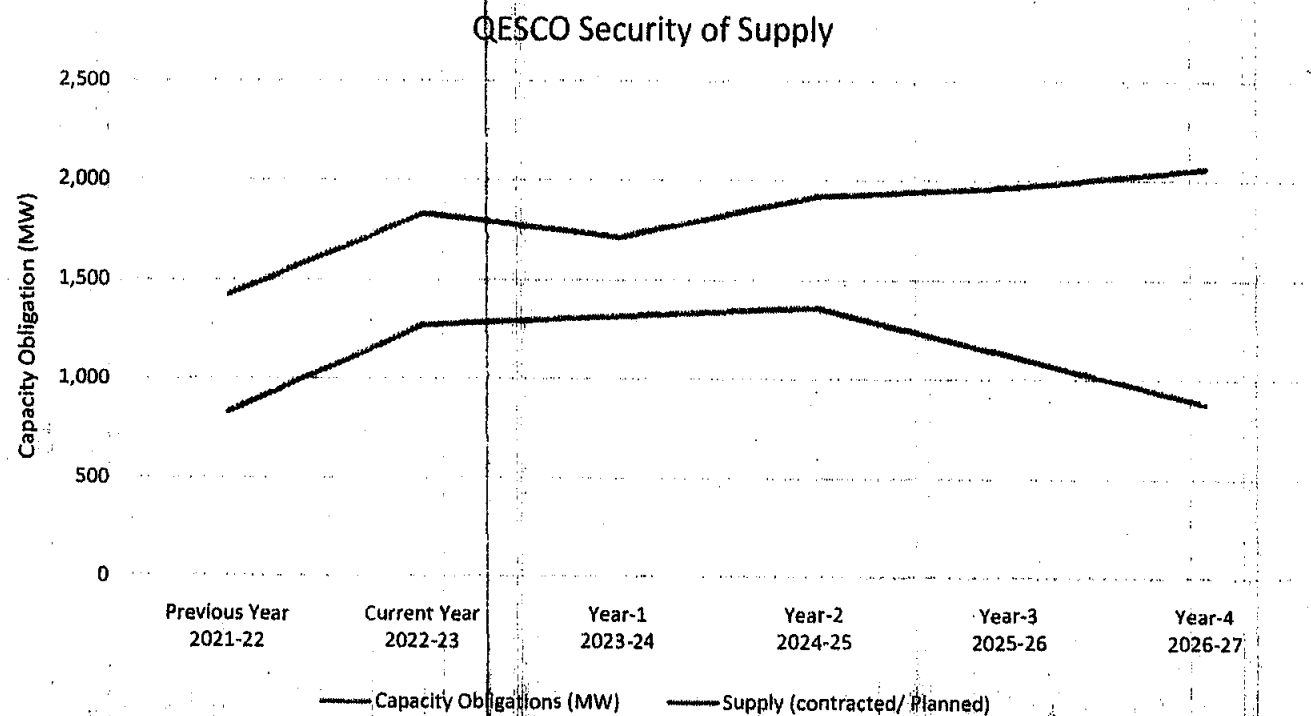


Figure 5-8 QESCOs Security of Supply including Proposed Procurement

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	49
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	258
10	CO Compliance (%) – Surplus / (Shortage)	0%	2%	-2%	-1%	21%	61%

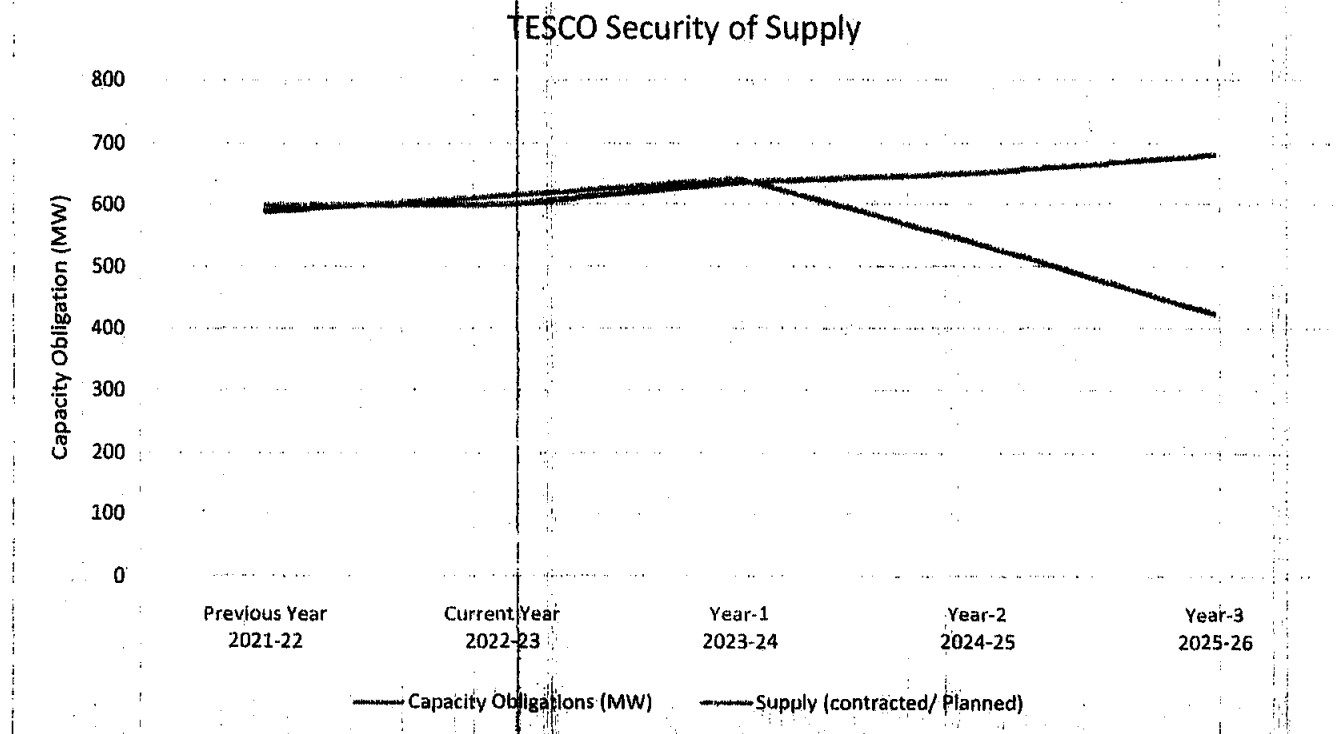


Figure 5-9 TESCOs Security of Supply including Proposed Procurement

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	11
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	659
10	CO Compliance (%) – Surplus / (Shortage)	0%	8%	0%	10%	39%	91%

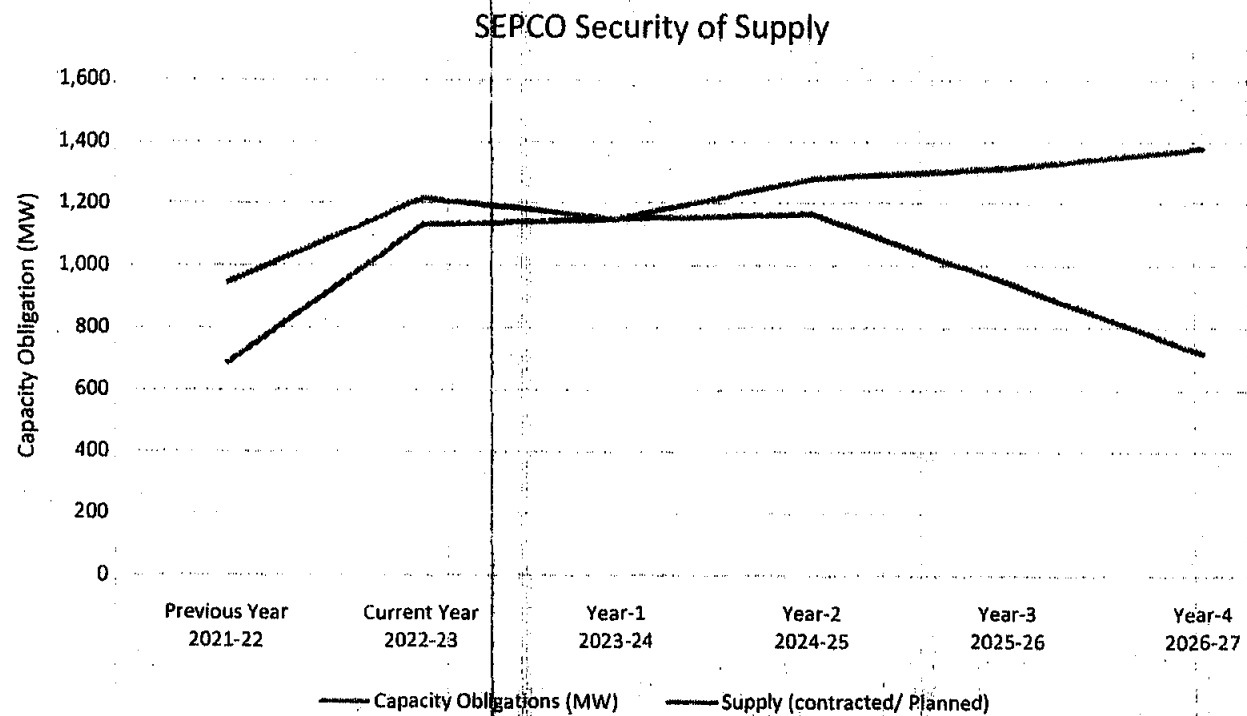


Figure 5-10 SEPCOs Security of Supply including Proposed Procurement

5.2.11. Total:

Table 5-26 XW-DISCOs' cumulative compliance with CO including proposed procurement

	Supply Demand	Total					
		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	Uncontracted (MW) ((2+3)-1)	4,157	3,294	165	1,691	7,673	15,541
5	Future Procurement (MW)	0	81	338	492	582	582
6	Cost Reduction Projects (MW)	0	0	275	275	275	275
7	Constraints Removal (MW)	0	500	500	500	500	0
8	Total Credited Capacity (MW) (2+3+5+6+7)	25,409	32,703	31,576	34,665	35,554	37,210
9	Surplus/ (Shortage) of Supply (MW) (8-1)	4,157	3,875	1,278	2,958	9,030	16,399
10	CO Compliance (%) – Surplus / (Shortage)	0%	13%	4%	9%	34%	79%

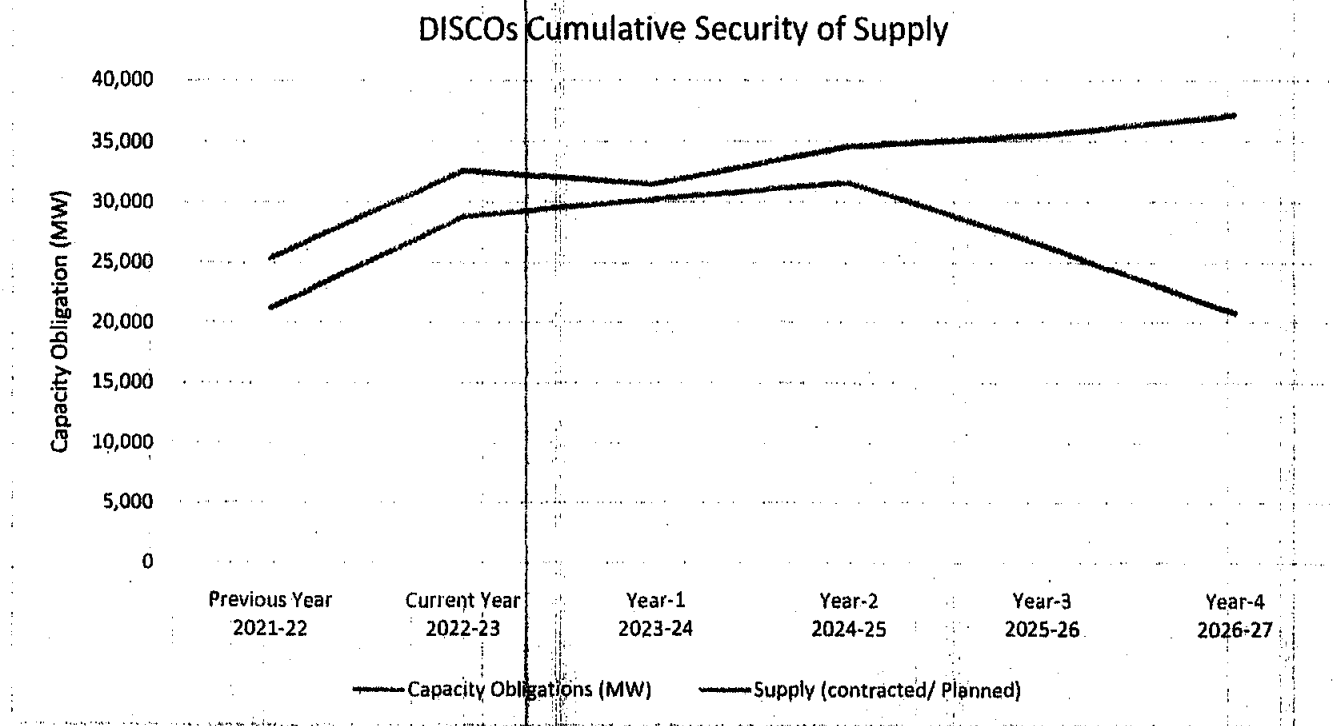


Figure 5-11XW-DISCOs Cumulative Security of Supply including Proposed Procurement

CONCLUSIONS

1. As per Capacity Obligation Report 2023 issued by Market Operator, 5 DISCOs (Namely; FESCO, LESCO, GEPCO, MEPCO and TESCO) are faced with non-compliances, ranging from minor to serious, to the respective capacity obligations over the programme horizon (FY 2022-23 to FY 2026-27). The other 5 DISCOs (Namely; IESCO, PESCO, HESCO, QESCO and SEPCO) are sufficiently, in some cases exorbitantly, above in compliance to the respective capacity obligations.
2. Without prejudice to the above individual assessment, the system as a whole is expected to remain compliant to the combined capacity obligation during the programme horizon.
3. The envisaged power procurement plans of DISCOS, comprising of procurement from IGCEP committed uncontracted capacities, localized solarization of 11 kV feeders, and continuation of retiring plants in view of transmission constraints, provides reasonable relief with regard to compliance with respective capacity obligations of individual DISCOS besides improvising system level compliance to the combined capacity obligation of the system.
4. The overall system-based compliance to the combined capacity obligation expected through power procurement envisaged during the programme period can be balanced down to mitigate individual non-compliances expected at relevant DISCOs by suitably adjusting the inter-DISCO commercial allocation factors provided at Section 18.2.5.2 of the Market Commercial Code. This allows best utilization of capacities within system on least-cost basis.
5. Considering that the capacity obligation is a derivative of non-coincident peak-demands of individual DISCOs, applying Reserve Margin of 10% over and above the said non-coincident peaks; compared with firm capacity estimations based on equivalent availability factors, is an apparent mismatch between the two parameters (i.e., the capacity obligation vs. the firm capacity) of the desired equilibrium. Accordingly, till the commercial allocation factors are changed on the basis of coincident demands of DISCOS, it would be pragmatic, for the time beings, to dispense with the application of the Reserve Margin or at-least lowering the %age of Reserve Margin. This will reduce undue pressure on capacity obligation requirements and compliance thereof.
6. While assessing compliance to the determined Capacity Obligation, the Capacity Obligation Report and, therefore, this Power Acquisition Programme is based on 80% and 60% of Capacity Obligation as success / compliance criteria for Year-3 and Year-4, respectively. For an aligned planning of security of supply, it would be prudent to carryout assessment at 100% of Capacity Obligation for all years, however, for years 3 and 4, the compliance criteria could be relaxed, e.g. current 80% and 60% or at an enhanced level of 90% and 80%, as proposed in the Capacity Obligation Report 2022-23 of the Market Operator.
7. While arriving at the firm capacities vis-à-vis the compliance to the capacity obligation(s), a sizeable quantum (2050 MW) pertaining to KE is subtracted from

the available capacities thus correspondingly compromising the compliance to the capacity obligation of XW-DISCOs. This needs attention.

8. The proviso to the sub-regulation 6(2) of Procurement Regulations provides 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 suppliers of last resort (except KE). Clarity on responsible entity for combining of the programme shall provide alignment of actions and compliance to the timelines.
9. The proviso to the sub-regulation 6(2) further stipulates for consultation with Independent Auction Administrator (IAA), in the absence of legal existence of IAA, the said consultation was dispensed with for the purposes of this document. Further, as per provisions of the Procurement Regulations, the very success of any Power Acquisition Programme highly depends on legal existence of IAA. An expeditious registration of IAA, in line with the Act, the Rules, the Regulations and approved CTBCM design is of high priority.
10. The regulatory requirements stipulate submission timelines for multiple documents (MTLF, PAP, DIIPs, IGCEP, TSEP & MYTs etc.). There is need to consider rearrangement and realignment of timelines and time horizons (i.e. the Control Periods) for each related document for a comprehensive and cohesive processing of power sector as a whole.
11. This combined power acquisition programme provides a balanced approach for meeting the demonstrated and expected demand of regulated consumers of XW-DISCOs, therefore, merits consideration and approval of the Authority.

PRAYER

1. The combined Power Acquisition Programme for the period from FY 2022-23 to FY 2026-27, representing the joint and collaborative efforts and collective wisdom of all XW-DISCO, i.e., Suppliers of Last Resort, provides a balanced approach for meeting the demonstrated and expected demand of regulated consumer adequately demonstrating the compliance with the combined capacity obligation of XW-DISCO (as SOLRs); may kindly be considered and approved by the honorable Authority.
2. The processing of other multiple requests of XW-DISCOs, pertaining to Multi-Year Tariffs (MYTs), integrated investment plans, approval of RFPs and benchmark tariffs for solarization of 11 kV feeders, licensing as electric power supplier(s), Use of System Charges and draft Use of System Agreement(s) as per NEPRA Open Access (Interconnection and Wheeling of Electric Power) Regulations, 2022, may kindly be continued or, as applicable, reconvened.

ANNEX-I:EXISTING GENERATION PLANTS

Generators under Legacy Contracts – Commissioned till date				
Sr No	Generator Name	Installed Capacity (MW)	Firm Capacity (MW)	Fuel Type
1	Atlas (APL)	219	200	RFO
2	AGL	163	150	RFO
3	China HUBCO (CPH)	1,320	1,038	Imp. Coal
4	Engro (EPQL)	217	194	Gas
5	Engro Thar (EPTL)	660	527	Local Coal
6	Foundation (FPCDL)	184	158	Gas
7	Halmore (HPGCL)	225	162	RLNG
8	Sahiwal Coal (HSR)	1,320	1,158	Imp. Coal
9	Liberty Tech (LPTL)	202	184	RFO
10	HuB N (NEL)	225	197	RFO
11	Balloki	1,223	1,001	RLNG
12	Haveli (HBS)	1,230	1,076	RLNG
13	Nishat C (NCPL)	209	171	RFO
14	Nishat P (NPL)	202	177	RFO
15	Orient (OPCL)	225	188	RLNG
16	Port Qasim (PQEPC)	1,320	1,225	Imp. Coal
17	Bhikki (QATPL)	1,180	1,033	RLNG
18	Saif (SPL)	225	189	RLNG
19	Sapphire (SECL)	225	186	RLNG
20	UCH-II	393	336	Gas
21	KAPCO 1	400	365	RLNG
22	KAPCO 2	900	820	RLNG
23	KAPCO 3	300	273	RLNG
24	Altern (AEL)	0	0	Gas
25	SABA	136	102	RFO
26	HUBCO	1,291	1,158	RFO
27	LIBERTY	225	201	Gas
28	FKPCL	172	114	RLNG
29	ROUSCH	450	411	RLNG
30	Kohinoor (KEL)	131	118	RFO
31	AES Lalpir	362	302	RFO
32	AES Pakgen	365	304	RFO
33	HCPC	0	0	Gas
34	GTPS Block#4	0	0	Gas
35	UCH	586	577	Gas
36	Guddu-I U(11-13)	415	129	Gas
37	Guddu-II U(5-10)	620	379	Gas
38	Guddu 747	747	559	Gas
39	Jamshoro-I U1	250	163	RFO
40	Jamshoro-II U4	200	131	RFO
41	Jamshoro-II U2	0	0	RFO
42	Jamshoro-II U3	0	0	RFO

Generators under Legacy Contracts – Commissioned till date				
Sr No	Generator Name	Installed Capacity (MW)	Firm Capacity (MW)	Fuel Type
43	Nandipur	525	446	RLNG
44	Muzaffargarh-I U1	210	94	RFO
45	Muzaffargarh-I U2	210	94	RFO
46	Muzaffargarh-I U3	210	94	RFO
47	Muzaffargarh-II U4	320	143	RFO
48	Muzaffargarh-II U5	-	0	RFO
49	Muzaffargarh-II U6	-	0	RFO
50	Davis	14	0	RLNG
51	Lucky Coal	660	607	Local Coal
52	Punjab Thermal	0	0	RLNG
53	Agar textile	12	12	SPP
54	Lucky cement	20	20	SPP
55	Thatta Cement	19	19	SPP
56	Al-noor sugar mill	36	36	SPP
57	Anoond	10	10	SPP
58	Omni	13	13	SPP
59	kumhariwala	3	3	SPP
60	Noon Sugar	14	14	SPP
61	Tarbela 1-14	3,478	3,478	Hydel
62	Tarbela Ext 4	1,410	1,410	Hydel
63	Mangla	1,140	1,000	Hydel
64	Ghazi Brotha	1,450	1,081	Hydel
65	Warsak	243	180	Hydel
66	Chashma	184	98	Hydel
67	Jinnah	96	19	Hydel
68	Allaikhwar	121	80	Hydel
69	Khan khwar	130	31	Hydel
70	DubairKhwar	72	112	Hydel
71	Neelam jehlam	969	802	Hydel
72	GolenGole	108	14	Hydel
73	GomalZam	17	8	Hydel
74	Rasul	22	8	Hydel
75	Dargai	20	15	Hydel
76	Nandipur	14	6	Hydel
77	Shadiwal	14	3	Hydel
78	Chichoki	13	4	Hydel
79	KuramGarhi	4	3	Hydel
80	Renala	1	1	Hydel
81	Chitral	1	1	Hydel
82	Shishi	2	2	Hydel
83	Jabban	22	20	Hydel
84	Ranolia	18	14	Hydel
85	Jagran-1	30	27	Hydel
86	Malakand III	81	75	Hydel

Generators under Legacy Contracts – Commissioned till date				
Sr No	Generator Name	Installed Capacity (MW)	Firm Capacity (MW)	Fuel Type
87	New Bong Escape	84	68	Hydel
88	Patrind	150	129	Hydel
89	Daralkhwar	37	2	Hydel
90	Gul pur	103	93	Hydel
91	Karot	720	612	Hydel
92	Jhing	14	12	Hydel
93	Marala HPP	8	6	Hydel
94	Pakpatan HPP	3	2	Hydel
95	ACT/Tapal Wind	30	15	Wind
96	Artistic_Wind	50	25	Wind
97	Artistic_Wind-2	50	15	Wind
98	Din Wind Energy	50	15	Wind
99	FFC(EL)	50	19	Wind
100	FWEL-1	50	20	Wind
101	FWEL-2	50	22	Wind
102	Gul Ahmad	50	18	Wind
103	Gul Ahmad-II	50	15	Wind
104	Hawa	50	26	Wind
105	Indus	50	15	Wind
106	Jhimpir	50	27	Wind
107	Lakeside Wind	50	15	Wind
108	Liberty Wind-I	50	15	Wind
109	Master	50	23	Wind
110	Metro	50	18	Wind
111	Metro Wind-II	60	18	Wind
112	NASDA Green Wind	50	15	Wind
113	Sachal	50	20	Wind
114	Sapphire	50	22	Wind
115	Three Gorges First (TGF)	50	21	Wind
116	Three Gorges Second (TGS)	50	23	Wind
117	Three Gorges Third (TGT)	50	22	Wind
118	Tricon-A	50	28	Wind
119	Tricon-B	50	27	Wind
120	Tricon-C	50	27	Wind
121	UEP	99	41	Wind
122	Yunus	50	21	Wind
123	ZEPL	56	22	Wind
124	Tenaga	50	27	Wind
125	Dawood	50	27	Wind
126	Zephyr	50	27	Wind
127	Tricom	50	15	Wind
128	Master Green	50	15	Wind
129	Liberty Wind-II	50	15	Wind
130	Tapal Wind-II (ACT-2)	50	15	Wind

Generators under Legacy Contracts – Commissioned till date				
Sr No	Generator Name	Installed Capacity (MW)	Firm Capacity (MW)	Fuel Type
131	JDW-II	26	26	Bagasse
132	JDW-III	27	27	Bagasse
133	RYKML	30	30	Bagasse
134	Chiniot Power	63	63	Bagasse
135	Hamza Sugar	15	15	Bagasse
136	Thall Power Layyah	25	25	Bagasse
137	Almoiz Industries	36	36	Bagasse
138	Chanar Energy	22	22	Bagasse
139	Chashnupp-I	325	312	Nuclear
140	Chashnupp-II	325	303	Nuclear
141	Chashnupp-III	340	311	Nuclear
142	Chashnupp-IV	340	305	Nuclear
143	K-2	1,145	996	Nuclear
144	K-3	1,145	996	Nuclear
145	Harappa	18	4	Solar
146	Quaid e Azam	100	29	Solar
147	AJ Power	12	3	Solar
148	Apollo	100	29	Solar
149	Best Green	100	28	Solar
150	Crest Energy	100	29	Solar
151	Zhenfa	100	22	Solar
Total		38,010	31,040	

**ANNEX-II: COMMITTED GENERATION PLANTS
CONSIDERED IN CAPACITY OBLIGATION REPORT**

Generators under Legacy Contracts – Not Commissioned					
Sr No	Generator Name	Expected COD	Installed Capacity (MW)	Firm Capacity (MW)	Fuel Type
1	Jabori	Jun-2023	10	9	Hydro
2	Thar TEL	Jul-2022	330	304	Local Coal
3	Trimmu	Jul-2022	1,263	1,162	CCGT_RLNG
4	Mangla (U #5-6)	Sep-2022	70	60	Hydro
5	Thar-I (SSRL)	Dec-2022	1,320	1,214	Local Coal
6	Thal Nova	Dec-2022	330	304	Local Coal
7	Jamshoro Coal (Unit I)	Dec-2022	660	607	Imported Coal
8	Helios	Apr-2023	50	11	Solar
9	HNDS	Apr-2023	50	11	Solar
10	Meridian	Apr-2023	50	11	Solar
11	Mangla (U #3-4)	May-2023	70	60	Hydro
2022-23			4,203	3,743	
12	Access_Electric	Sep-2023	10	2	Solar
13	Access_Solar	Sep-2023	12	3	Solar
14	KurramTangi	Oct-2023	18	15	Hydro
15	Riali-II	Dec-2023	7	6	Hydro
16	Lawi	Apr-2024	69	59	Hydro
17	Suki Kinari (U #1)	May-2024	221	188	Hydro
18	Safe	Jun-2024	10	2	Solar
19	Western	Jun-2024	50	15	Wind
2023-24			397	290	
20	Suki Kinari (U #2)	Jul-2024	221	188	Hydro
21	Tarbela_Ext_5 (U #1)	Jul-2024	510	434	Hydro
22	Mangla (U #1-2)	Jul-2024	70	60	Hydro
23	Tarbela_Ext_5 (U #2)	Aug-2024	510	434	Hydro
24	CASA	Aug-2024	1,000	1,000	Cross Border Interconnection
25	Suki Kinari (U #3)	Sep-2024	221	188	Hydro
26	Tarbela_Ext_5 (U #3)	Sep-2024	510	434	Hydro
27	Suki Kinari (U #4)	Nov-2024	221	188	Hydro
28	Kathai-II	Dec-2024	8	7	Hydro
29	Shahtaj	Aug-2024	32	15.0	Bagasse
2024-25			3,303	2,945	
30	Gwadar	Aug-2025	300	276	Local Coal
31	Mangla (U #9-10)	Sep-2025	70	60	Hydro
32	Dasu_1 (U #1)	May-2026	360	306	Hydro
33	Mohmand (U #1)	May-2026	200	170	Hydro
2025-26			930	812	
34	Dasu_1 (U #2)	Jul-2026	360	306	Hydro
35	Mohmand (U #2)	Jul-2026	200	170	Hydro
36	Dasu_1 (U #3)	Aug-2026	360	306	Hydro
37	Mohmand (U #3)	Sep-2026	200	170	Hydro

Generators under Legacy Contracts – Not Commissioned					
Sr No	Generator Name	Expected COD	Installed Capacity (MW)	Firm Capacity (MW)	Fuel Type
38	Mangla (U #7-8)	Nov-2026	30	26	Hydro
39	Mohmand (U #4)	Nov-2026	200	170	Hydro
40	Dasu (U #4)	Nov-2026	360	306	Hydro
41	Dasu (U #5)	Feb-2027	360	306	Hydro
42	KeyalKhwar (U #1)	Feb-2027	64	54	Hydro
43	Dasu (U #6)	May-2027	360	306	Hydro
44	KeyalKhwar (U #2)	May-2027	64	54	Hydro
2026-27			2,558	2,174	
Grand Total			11,391	9,964	

**ANNEX-III: COMMITTED GENERATION PLANTS
CONSIDERED FOR FUTURE PROCUREMENT**

Generators under Legacy Contracts – Not Commissioned						
Sr No	Generator Name	Expected COD	Installed Capacity (MW)	Firm Capacity (MW)	Fuel Type	Procurement Year
1	Chianwali HPP	Jun-2023	5	5	Hydro	2023-24
2	Deg Outfall	Jun-2023	4	3	Hydro	2023-24
3	Karora	Aug-2022	12	10	Hydro	2023-24
4	Koto	Sep-2022	41	35	Hydro	2023-24
5	Jagran-II (U #1)	Apr-2023	12	10	Hydro	2023-24
6	Jagran-II (U #2)	May-2023	12	10	Hydro	2023-24
7	Machai (PESCO)	Jun-2023	3	2	Hydro	2023-24
8	Faran Sugar Mills (HESCO)	Mar-2023	3	3	SPP	2023-24
9	Bandhi Sugar Mills (HESCO)	Mar-2023	4	4	SPP	2023-24
10	Habib Sugar Mills (HESCO)	Mar-2023	3	3	SPP	2023-24
11	Net-Metering	-	370	81	Solar	2022-23
2022-23			469	166		
12	Jagran-II (U #3-4)	Jul-2023	24	20	Hydro	2023-24
13	Chamfall	Aug-2023	3	3	Hydro	2023-24
14	Trans Atlantic	Jun-2024	50	15	Wind	2023-24
15	Siachen	Sep-2023	100	22	Solar	2023-24
16	Manjhand	Sep-2023	50	11	Solar	2023-24
17	Zorlu	Dec-2023	100	22	Solar	2023-24
18	Net-Metering	-	370	81	Solar	2023-24
2023-24			697	175		
19	GorkinMatiltan	Jul-2024	84	71	Hydro	2024-25
20	DaralKhwar-II	Jul-2024	10	9	Hydro	-
21	Kot Addu/ Muzafargarh	2024-25	600	132	Solar	-
22	Net-Metering	-	370	81	Solar	2024-25
2024-25			1,064	293		
23	ChapariCharkhel	Sep-2025	11	9	Hydro	2025-26
24	Balkani	Jul-2025	8	7	Hydro	-
25	Batdara	Jul-2025	5	4	Hydro	-
26	Net-Metering	-	370	81	Solar	2025-26
2025-26			394	101		
27	Net-Metering	-	370	81	Solar	2026-27
2026-27			370	81		
Grand Total			2,993	817		