भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority

जल विद्युत गृहों के निष्पादन का पुनर्विलोकन 2024-25

REVIEW OF PERFORMANCE OF HYDRO POWER STATIONS 2024-25

नई दिल्ली
NEW DELHI

सितम्बर, 2025
September, 2025

(विद्युत अधिनियम, 2003 की धारा 73 (आई) व (जे) के तहत के0वि0प्रा0 के सांविधिक दायित्व का निर्वहन करते हुए प्रकाशित)

(PUBLISHED IN FULFILMENT OF CEA'S STATUTORY OBLIGATION UNDER SECTION 73(i) & (j) OF THE ELECTRICITY ACT, 2003)

FUNCTIONS AND DUTIES OF CEA AS PER SECTION-73 OF ELECTRICITY ACT-2003

The Authority shall perform such functions and duties as the Central Government may prescribe or direct, and in particular to –

a) Advise the Central Government on the matters relating to the national electricity policy, formulate short-term and perspective plans for development of the electricity system and coordinate the activities of the planning agencies for the optimal utilization of resources to sub serve the interests of the national economy and to provide reliable and affordable electricity to all consumers;

b) Specify the technical standards for construction of electrical plants, electric lines and connectivity to the grid;

c) Specify the safety requirements for construction, operation and maintenance of electrical plants and electric lines;

d) Specify the Grid Standards for operation and maintenance of transmission lines;

e) Specify the conditions for installation of meters for transmission and supply of electricity;

f) Promote and assist in the timely completion of schemes and projects for improving and augmenting the electricity system;

g) Promote measures for advancing the skills of persons engaged in electricity industry;

h) Advise the Central Government on any matter on which its advice is sought or make recommendation to that Government on any matter if, in the opinion of the Authority, the recommendation would help in improving the generation, transmission, trading, distribution and utilization of electricity;

i) Collect and record the data concerning the generation, transmission, trading, distribution and utilization of electricity and carry out studies relating to cost, efficiency, competitiveness and such like matters;

j) Make public from time to time the information secured under this Act, and provide for the publication of reports and investigations;

k) Promote research in matters affecting the generation, transmission, distribution and trading of electricity;

l) Carry out, or cause to be carried out, any investigation for the purpose of generating or transmitting or distributing electricity;

m) Advise any State Government, licensees or the generating companies on such matters which shall enable them to operate and maintain the electricity system under their ownership or control in an improved manner and where necessary, in coordination with any other Government, licensee or the generating company owning or having the control of another electricity system;

n) Advise the Appropriate Government and the Appropriate Commission on all technical matters relating to generation, transmission and distribution of electricity; and

o) Discharge such other functions as may be provided under this Act.

भारत सरकार
Government of India
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Central Electricity Authority

जल विद्युत गृहों के निष्पादन का पुनर्विलोकन 2024-25

REVIEW OF PERFORMANCE OF HYDRO POWER STATIONS 2024-25

जल परियोजना आयोजन तथा अन्वेषण प्रभाग
HYDRO PROJECT PLANNING & INVESTIGATION DIVISION

नई दिल्ली
NEW DELHI
सितम्बर,2025
September,2025

(विद्युत अधिनियम, 2003 की धारा 73 (आई) व (जे) के तहत के0वि0प्रा0 के सांविधिक दायित्व का निर्वहन करते हुए प्रकाशित)
(PUBLISHED IN FULFILMENT OF CEA'S STATUTORY OBLIGATION UNDER SECTION 73(i) & (j) OF THE ELECTRICITY ACT, 2003)

प्राक्कथन

जल विद्युत शक्ति हमारे देश में पिछले 100 वर्षों से नवीनीकरण ऊर्जा का सबसे विश्वसनीय स्त्रोत रहा है। जल विद्युत शक्ति केंद्रों की उपलब्धता में निरंतर सुधार के उद्देश्य से केन्द्रीय विद्युत प्राधिकरण (के. वि. प्रा.), केन्द्रीय सार्वजनिक क्षेत्र, राज्य व निजी क्षेत्र में विद्युत उपक्रमों के निकट सहयोग से उनके वार्षिक निष्पादन की समीक्षा के लिए अध्ययन करता है।

वर्ष 2024-25 के दौरान जल विद्युत शक्ति केन्द्रों के निष्पादन का समीक्षा संबंधी प्रतिवेदन विद्युत अधिनियम, 2003 के खंड 73 (आई) और (जे) के तहत संवैधानिक दायित्व को आंशिक रूप से पूरा करने में केन्द्रीय विद्युत प्राधिकरण द्वारा किए गए ऐसे प्रकाशनों की श्रृंखला में 37 वां प्रतिवेदन हैं। इस रिपोर्ट में 47728.17 मेगावाट की कुल संस्थापित क्षमता वाले 216 जल विद्युत केन्द्रों की 741 जल विद्युत इकाइयों के निष्पादन का व्यापक विश्लेषण किया गया है, जिसके लिए केन्द्रीय, राज्य और निजी क्षेत्रों में ऊर्जा उत्पादन संस्थाओँ द्वारा अनुपलब्धता संबंधी आंकड़े उपलब्ध कराए गए हैं।

प्रचालन उपलब्धता संबंधी सूचना पर्याप्त और विश्वसनीय विद्युत आपूर्ति सुनिश्चित करने में काफी महत्वपूर्ण है। अध्ययनों के अनुसार वर्ष 2024-25 के दौरान जल विद्युत केन्द्रों की औसत प्रचालन उपलब्धता 90.32% थी। प्रणोदित (Forced) और योजनाबद्ध अनुपलब्धता (Planned Outages) के कारण जल विद्युत इकाइयों की औसत गैर-उपलब्धता क्रमश: 3.02% और 6.66% थी। वर्ष 2024-25 के दौरान जल विद्युत केन्द्रों से उत्पादन 148.63 बिलियन यूनिट था, जो वर्ष 2023-24 के उत्पादन 134.05 बिलियन यूनिट की तुलना में लगभग 10.88 % अधिक था।

मुझे विश्वास है कि यह समीक्षा विद्युत केन्द्र प्रबंधन को उपयुक्त प्रचालन एंव रखरखाव (ओ. एंड एम.) की नीति तैयार करके जल विद्युत संयंत्रों की उपलब्धता में और सुधार लाने में उपयोगी मार्गदर्शन प्रदान करेगा। प्रणोदित अनुपलब्धता के कारणों का भी व्यापक विश्लेषण करने की आवश्यकता है ताकि विनिर्माताओं/ओ. एंड एम. एजेंसियों द्वारा उचित उपाय किये जायें और इनकी पुनरावृत्ति को कम किया जा सके जिससे प्रचालन उपलब्धता में सुधार किया जा सके।

समीक्षा के लिए अनुपलब्धता आंकड़े/सूचना उपलब्ध कराने के लिए मैं सभी उर्जा उत्पादन उपक्रमों का हार्दिक धन्यवाद करता हूँ। मैं इस रिपोर्ट के लिए अपेक्षित निविष्ट आंकड़ों का विश्लेषण करने में सूचना प्रोद्योगिकी प्रभाग, के0वि0प्रा0 द्वारा प्रदान किए गए सहयोग तथा एच. पी. पी. & आई. के सभी अधिकारीयों (नेतृत्व श्री योगेंद्र कुमार स्वर्णकार, मुख्य अभियंता, सी. ई . ए.) के लिए उन्हें धन्यवाद देता हूँ।

नई दिल्ली
सितम्बर, 2025

(एम. जी. गोखले)
सदस्य (जल विद्युत), के. वि.प्रा.

FOREWORD

Hydro Electric Power has been the most reliable source of renewable energy for the past over 100 years in our country. In the quest for continual improvement in availability of Hydro Power Stations, Central Electricity Authority (CEA) carries out studies to review their annual performance in close co-operation with Central PSUs and Power Utilities in State & Private Sector.

The report on 'Review of Performance of Hydro Power Stations during the year 2024-25 is 37th in the series of such publication by Central Electricity Authority in partial fulfilment of the statutory obligations under Section 73(i) & (j) of the Electricity Act, 2003. The report provides exhaustive analysis of performance of 741 hydro-electric units installed at 216 hydro-electric stations having total installed capacity of 47728.17 MW for which outage data has been provided by generation utilities in Central, State and Private sectors.

The information on operation availability is of vital importance in ensuring adequate and reliable power supply. According to the studies, the average operating availability of hydroelectric stations during the year 2024-25 was 90.32%. The average non-availability of hydro units due to forced and planned outages was 3.02% and 6.66% respectively. The generation from hydro stations during 2024-25 was 148.63 Billion Units, which was about 10.88% more compared to the generation of 134.05 BU in the previous year viz. 2023-24.

I am confident that the review would provide useful guidance to power station authorities in making further improvement in the availability of hydel plants by chalking out suitable O&M strategies. There is also a need to undertake detailed analysis of the reasons of forced outages for devising necessary measures by the manufacturers/O&M agencies so as to minimize the recurrence of the same and to improve the operational availability.

I wish to express my sincere thanks to all the power generating utilities for providing outage data/information for the review. I would also like to put on record the co-operation extended by Information Technology Division, CEA for analysis of the input data required for this report and last but not the least the valiant efforts put in by HPP & I division under the guidance of Shri Yogendra Kumar Swarnkar, Chief Engineer, CEA.

New Delhi
September, 2025

(M. G. Gokhale)
Member (Hydro), CEA

प्रस्तावना

किसी भी देश के आर्थिक प्रगति के लिए विद्युत शक्ति महत्वपूर्ण बुनियादी आवश्यकताओं में से एक है। दिनांक 31.03.2025 को देश में कुल प्रतिष्ठापित विद्युत उत्पादन क्षमता 475211.80 मेगावाट थी जिसमें 25 मेगावाट से ज्यादा प्रतिष्ठापित क्षमता वाले स्टेशनों की जल विद्युत क्षमता 47728.17 मेगावाट (10.04%) थी ।

केन्द्रीय विद्युत प्राधिकरण (के. वि. प्रा.) उत्पादन निष्पादन कड़ी निगरानी, ब्रेकडाउन के कारणों के विश्लेषण, नवीनीकरण तथा आधुनिकीकरण कार्यों आदि के द्वारा ऊर्जा उत्पादक उपक्रमों के साथ सहयोग से जल विद्युत केन्द्रों के निष्पादन में निरंतर सुधार के लिए सघन प्रयास कर रहा है। आगामी वर्षों में सौर एवं पवन स्रोतों से संभावित विशाल ऊर्जा क्षमता वृद्धि के कारण यह आवश्यक है कि मौजूदा जल विद्युत केन्द्रों को ग्रिड सुरक्षा और सुरक्षा के लिए उनके प्रदर्शन और उपलब्धता में सुधार करना चाहिए ताकि पीकिंग और संतुलन शक्ति प्रदान करने के लिए उनका उपयोग किया जा सके ।

जल विद्युत केन्द्रों के संचालन प्रदर्शन को प्रभावित करने वाले कई पहलू हैं जिनमें नियोजित रखरखाव, अनुसूचित/ आंशिक अनुपलब्धता, वास्तविक प्रवाह का पैटर्न इत्यादि शामिल हैं। इसलिए प्रणोदित अनुपलब्धता के कारणों के विस्तृत विश्लेषण करने तथा अत्याधुनिक रखरखाव प्रथाओं को अपनाकर उनके पुनरावृत्ति को कम करने के लिए उपयुक्त उपायों से स्टेशन की परिचालन उपलब्धता में सुधार करने की आवश्यकता है ।

इस प्रकाशन के लिए आवश्यक अध्ययन जल परियोजना आयोजन एंव अन्वेषण (एच.पी.पी.& आई.) प्रभाग, के. वि. प्रा. के अधिकारियों की टीम द्वारा किया गया है। के. वि. प्रा. रिपोर्ट की सामग्री और प्रस्तुति में सुधार करने के लिए ठोस प्रयास कर रहा है । इस संबंध में रचनात्मक सुझावों का स्वागत है और उनकी सराहना की जाएगी ।

मैं सभी सरकारी एवं निजी क्षेत्र के विद्युत उपक्रमों और विद्युत केंद्र के अधिकारियों का भी पुनर्विलोकन के लिए जरूरी आंकड़े उपलब्ध कराने के लिए हार्दिक धन्यवाद देता हूँ ।

नई दिल्ली
सितम्बर, 2025

(योगेंद्र कुमार स्वर्णकार)
मुख्य अभियन्ता, के. वि. प्रा.

PREFACE

Electric power is one of the most important infrastructure requirements for the overall economic development of the country. As on 31.03.2024, the overall installed generating capacity of the country was 475211.80 MW and hydro power stations (above 25 MW capacity) with capacity of 47728.17 MW constituting a share of 10.04 % in the total Installed Capacity.

Central Electricity Authority (CEA) is making concerted efforts for improving the performance of Hydro Power Stations in close co-ordination with respective Hydro Power Generating Utilities in the Central, State & Private Sector through close monitoring of generation performance, analysis of reasons for breakdowns, Renovation & Modernization works etc. In light of huge capacity additions envisaged from Solar and Wind sources of renewable power in the coming years, it is imperative that the existing power stations must improve their performance and availability in order to supply peaking and balancing power for grid safety and security.

A number of factors influence the operating performance of hydro power stations which include planned maintenance, unscheduled total/partial outages, pattern of actual inflows, etc. There is, thus, need for undertaking detailed analysis of the reasons of forced outages and taking suitable measures to minimize their recurrence and, thereby, improving the operating availability of the station by adopting state-of-the-art maintenance practices.

Studies for this publication have commendably been carried out by the team of officers in HPP&I Division of CEA. CEA has been making concerted efforts to improve the contents and presentation of the report. Constructive suggestions in this regard are welcome and will be appreciated.

I wish to express my sincere thanks to all the Hydro Power Sector Utilities and Power Station Authorities for making available the necessary data for the review.

New Delhi
September, 2025

(Yogendra Kumar Swarnkar)
Chief Engineer, CEA

आभार

मैं, सदस्य (जल विद्युत), के. वि. प्रा. का इस पुनर्विलोकन को इस स्वरूप में लाने में उनके अमूल्य सुझावों तथा मार्गदर्शन के लिये आभारी हूँ।

मैं, मुख्य अभियन्ता (एच. ई. & टी. डी. प्रभाग) के. वि. प्रा. का जल विद्युत यूनिटों के नवीनीकरण एंव आधुनिकीकरण एंव उन्नयन पर अध्याय तैयार करने के लिए धन्यवाद देता हूँ।

मैं, श्री सुमित गोएल, उप निदेशक, कुमारी डिम्पल गरोडिया, सहायक निदेशक, श्री गौरव कुमार, सहायक निदेशक, श्री बासुदेब बिस्वास, समूह वरिष्ठ प्रबंधक (सिविल), श्रीमती सुनीता भंडारी, डी.ई.ओ, कुमारी प्रियांशी गुप्ता व अन्य अधिकारियों तथा कर्मचारियों का भी इस पुनर्विलोकन के प्रकाशन में सहयोग के लिये धन्यवाद देता हूँ।

(बलवान कुमार)
निदेशक, के.वि.प्रा.

ACKNOWLEDGEMENT

I am grateful to Member (Hydro), CEA for their valuable suggestions and guidance in preparation of this Review.

I would also like to express my sincere thanks to Chief Engineer (HE&TD), CEA for preparing the chapter on Renovation Modernisation & Uprating of Hydro generating units.

I would also like to express my appreciation and thanks to my team of officers comprising Sh. Sumit Goel, Deputy Director, Miss Dimpal Garodia, Assistant Director, Sh. Gauraw Kumar, Assistant Director, Sh. Basudeb Biswas, Group Senior Manager (Civil), Smt. Sunita Bhandari, DEO, Miss Priyanshi Gupta, Stenographer and other officers/ officials for their untiring efforts and support in bringing out this Review.

(Balwan Kumar)
Director, CEA

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SUMMARY

1.0 General

1.1 This review covers the performance of Hydro-Electric (H.E.) Stations having installed capacity of more than 25 MW. As on 31st March, 2025 there were 741 H.E. generating units installed in 216 Hydro-Electric Stations with an aggregate installed capacity of 47728.17 MW in operation. Performance of 44 important Reservoir based schemes has also been discussed separately in the report.

1.2 Region-wise summary of the existing H.E. Stations in operation with installed capacity above 25 MW as on 31.03.2025 in the country vis-à-vis that on 31.03.2024 is given below in Table S-1.

TABLE S-1

REGION-WISE SUMMARY OF HYDRO-ELECTRIC STATIONS 2024-25 VIS-A-VIS 2023-24

Region	No. of Stations as on		No. of Units as on		Capacity (MW) as on	
	31.03.25	**31.03.24**	**31.03.25**	**31.03.24**	**31.03.25**	**31.03.24**
Northern	79	77	266	260	20474.27	19774.27
Western	28	28	101	101	7392.00	7392.00
Southern	71	69	250	246	11847.15	11747.15
Eastern	24	24	86	86	5987.75	5987.75
North Eastern	14	14	38	38	2027.00	2027.00
All India	**216**	**212**	**741**	**731**	**47728.17**	**46928.17**

1.3 Growth of Installed Capacity and Generation

The installed capacity of Hydro-Electric Stations viz-à-viz total capacity, the contribution in generation by Hydro-Electric plants and trend of hydro capacity & generation over the years are indicated in **Table-S-2**. From **Table S-2**, it may be observed that the overall share of hydro in terms of installed capacity in the country rose from 37.3% at the end of 1947 to 50.61% during 1962-63. However, thereafter, the share of hydro progressively decreased and is presently 10.04% at the end of 2024-25. The generation from hydro stations during the year 2024-25 accounted for 9.47 % of the total energy generation in the country.

TABLE S-2

HYDRO-ELECTRIC CAPACITY & GENERATION VIS-À-VIS TOTAL CAPACITY & GENERATION

Year	Installed Capacity			Generation		
	Total (MW)	Hydro (MW)	Hydro as % of Total	Total (MU)	Hydro (MU)	Hydro as % of Total
1950	1713	560	32.63	5106	2519	49.33
1955-56	2886	1061	36.76	9145	4295	46.97
1960-61	4653	1917	41.20	16937	7837	46.27
1962-63	5801	2936	50.61	22365	11805	52.78
1965-66	9027	4124	45.68	32890	15225	46.29
1968-69	12957	5907	45.59	47434	20723	43.69
1973-74	16664	6966	41.80	66689	28972	43.44
1978-79	26680	10833	40.60	102523	47159	46.00
1979-80	28448	11384	40.02	104627	45478	43.47
1984-85	42585	14460	33.96	156859	53948	34.39
1989-90	63636	18307	28.77	245437	62116	25.31
1991-92	69065	19194	27.79	287028	72757	25.35
1996-97	85795	21658	25.24	395889	68901	17.40
1997-98	89203	21904	24.58	421748	74582	17.68
1998-99	92269	22479	24.10	447464	82923	18.53
1999-00	97837	23857	24.37	481128	80755	16.78
2000-01	101450	25153	24.75	499429	74362	14.89
2001-02	105046	26269	25.01	515066	73759	14.32
2002-03	107877	26767	24.81	531607	63834	12.01
2003-04	112684	29507	26.19	558113	73775	13.22
2004-05	118419	30936	26.12	587416	84495	14.38
2005-06	124287	32326	26.01	624631	101293	16.22
2006-07	132321	34662	26.19	659513	113359	17.19
2007-08	143061	37002	25.86	704469	123424	17.52
2008-09*	147917	36846	24.91	714653	109840	15.37
2009-10*	159398	36863	23.13	763429	103916	13.61
2010-11*	173626	37567	21.64	805532	114257	14.18
2011-12*	199877	38990	19.51	871602	130510	14.97
2012-13*	223344	39491	17.68	907262	113720	12.53
2013-14*	243029	40531	16.68	961552	134848	14.02
2014-15*	267637	41267	15.42	1043665	129244	12.38
2015-16*	302088	42783	14.16	1102578	121377	11.01
2016-17*	326849	44478	13.61	1154524	122378	10.60
2017-18*	344002	45293	13.17	1201528	126123	10.50
2018-19*	356100	45399	12.75	1244930	134894	10.84
2019-20*	370106.46	45699.2	12.34	1244989.43	155769.12	12.51
2020-21*	382151.22	46209.20	12.09	1225842.14	150299.52	12.26
2021-22*	399496.61	46722.50	11.69	1313453.87	151627.33	11.54
2022-23*	416058.89	46850.17	11.26	1414171	162099	11.46
2023-24*	434195.13	46928.17	10.81	1508277	134053.90	8.89
2024-25*	475211.80	47728.17	10.04	1569204.57	148633.98	9.47

* Capacity above 25 MW only has been considered.

1.4 The report contains outage data of 216 H.E. Stations (above 25 MW) covering 741 units and having an aggregate installed capacity of 47728.17 MW which was made available by various utilities for the purpose of this Review.

1.5 The performance review also analyses year-wise generation, planned maintenance, forced outages and operating availability for the last 10 years (viz. 2014-15 to 2024-25).

1.6 This review covers information in respect of renovation & modernization of Hydroelectric Power stations in the country, achievements during the year 2024-25 and programme for the year 2025-26.

1.7 The report comprises ten chapters as under

Chapter No.	Particulars
1	Hydro-Electric Potential and Development
2	Generation Performance
3	Major Reservoir Based H.E. Schemes
4	Planned Maintenance of H.E. Units
5	Forced Outage of H.E. Units
6	Operating Availability of H.E. Units
7	Miscellaneous Outages of H.E. Units
8	Generation Programme for the year 2025-26
9	Renovation & Modernisation of Hydro-Electric Power Projects
10	Definitions and Abbreviations

2.0 Generation Performance

The generation from the hydroelectric power stations in the country during 2024-25 was 148633.98 MU (excluding import from Bhutan), which was about 10.88% higher than the generation during 2023-24.

2.1 Utility-wise/ Sector-wise Performance of H.E. Stations

The utility-wise/ sector-wise target of energy generation vis-à-vis actual generation and surplus / shortfall in respect of Hydro Electric stations are given below in Table S-3.

TABLE S-3

UTILITY-WISE PERFORMANCE OF HYDRO ELECTRIC STATIONS (2024-25 VIS-A-VIS 2023-24)

Utilities	Installed Capacity (MW) (As on 31.03.2025)	Generation					
		Target (MU)		Actual (MU)		Surplus (+)/ Shortfall (-) in %	
		2024-25	2023-24	2024-25	2023-24	2024-25	2023-24
CENTRAL SECTOR							
BBMB	2956.3	9650	9700	10748.49	11583.17	11.38	19.41
NHPC LTD	6051.2	25401	25628	19730.33	21585.84	-22.32	-15.77
SJVN LTD	1972.02	9145	9080	9810.33	8088.21	7.28	-10.92
NTPC LTD	800	3100	3100	3353.15	2952.05	8.17	-4.77
THDC LTD	1400	5269	4160	4618.58	4441.69	-12.34	6.77
NHDC	1520	3265	3265	5463.61	4470.5	67.34	36.92
DVC	143.2	286	286	273.39	176.28	-4.41	-38.36
NEEPCO LTD	1500	5247	10366	5248.73	4848.09	0.03	-53.23
TOTAL CENTRAL	**16342.72**	**61363**	**65585**	**59246.61**	**58145.83**	**-3.45**	**-11.34**
PRIVATE SECTOR							
MPCL	86	243.85	332	243.85	249.06	-26.77	-24.98
EPPL	100	184.00	348	184.00	140.74	-45.88	-59.56
ADHPL	192	656.72	653	656.72	587.67	-0.50	-10.00
GBHPPL	70	282.62	293	282.62	256.33	3.15	-12.52
HBPCL	300	1365.61	1213	1365.61	1162.78	12.58	-4.14
JSW ENERGY	1045	4537.06	4132	4537.06	3786.39	9.83	-8.36
IAEPL	36	158.42	158	158.42	154.99	0.27	-1.91
AHPC LTD	330	1452.16	1310	1452.16	1306.39	10.85	-0.28
JPVL	400	1828.43	1750	1828.43	1627.52	4.48	-7.00
DLHP	34	32.35	36	32.35	23.48	-10.14	-34.78
GIPL	110	395.86	537	395.86	473.07	-26.28	-11.91
TPCL	447	1561.12	1470	1561.12	1557.6	5.48	5.96
DEPL	96	410.85	412	410.85	356.93	-3.33	-13.37
SEPL	97	454.71	436	454.71	433.19	4.53	-0.64
SNEHA KINETIC	96	35.26	463	35.26	394.08	-92.88	-14.89
NTPGPL	0	0.00	50	0.00	0	-100.0	0.00
HSPPL	100	388.26	402	388.26	231.57	-3.42	-42.40

L&T	99	442	439	442	393.66	7.76	-10.33
GMR	180	732	770	732	708.17	-4.84	-8.03
MBPC	113	395	442	395	396.83	-14.98	-10.22
GREENKO	0	880	0	0	0	0	0
TOTAL PRIVATE	**3931**	**16803**	**15646**	**15556**	**14240**	**-7.42**	**-8.99**
STATE SECTOR							
JKSPDCL	1110	5073	5551	4841.82	4781.78	-4.56	-13.86
HPPCL	406	890	874	918.10	846.26	3.16	-3.17
HPSEBL	372	1653	1653	1369.40	1278.95	-17.16	-22.63
BVPC	100	40.00	0	20.63	0	-100.0	0.00
RRVUNL	411	662	672	905.80	1013.97	36.83	50.89
PSPCL	1051	3640	3665	3461.67	3956.85	-4.90	7.96
UPJVNL	501.6	1215	1324	1273.74	850.64	4.83	-35.75
UJVNL	1372.15	5069	5135	4952.24	4722.42	-2.30	-8.03
SSNNL	1450	3955	3100	4862.09	3699.72	22.94	19.35
GSECL	540	1051	1051	1166.43	856.61	10.98	-18.50
MAHAGENCO	2406	4051	3888	3599.22	3316.2	-11.15	-14.71
MPPGCL	875	2461	2407	2585.67	2341.49	5.07	-2.72
CSPGCL	120	274	274	419.42	321.76	53.07	17.43
APGENCO	1796.75	3557	3605	3984.17	2334.98	12.01	-35.23
TSGENCO	2405.6	3686	3969	5270.78	1243.29	42.99	-68.67
KPCL	3617.2	11537	12242	13855.99	8874.4	20.10	-27.51
KSEBL	1964.15	7519	7668	6733.99	5155.72	-10.44	-32.76
TANGEDCO	2178.2	4329	4220	4602.72	3563.28	6.32	-15.56
JUUNL	130	110	110	151.59	96.84	37.81	-11.96
OHPC	2039.8	5684	5363	5804.28	5299.18	2.12	-1.19
TUL	1200	0	5652	0.00	4292.76	0	-24.05
WBSEDCL	986	1600	1560	1735.34	1683.07	8.46	7.89
APGCL	100	380	380	410.50	328.89	8.03	-13.45
MePGCL	322	1107	1106	905.58	808.58	-18.20	-26.89
TOTAL STATE	**27454.45**	**69543.00**	**75469**	**73831.17**	**61667.64**	**6.17**	**-18.29**
TOTAL ALL INDIA	**47728.17**	**147709.00**	**156700.0**	**148633.98**	**134053.92**	**0.63**	**-14.45**

During the year 2024-25, overall hydro generation was more than the target in respect of BBMB, SJVN LTD, NTPC LTD, NHDC & NEEPCO LTD in Central Sector and

GBHPPL, HBPCL, JSW ENERGY, IAEPL, AHPC LTD, JPVL, TPC, SEPL and L&T in Private Sector. As regards, generation by State Electricity Boards/Corporations / Departments, hydro generation was more than the target in respect of HPPCL, RRVUNL, UPJVNL, SSNNL, GSECL, MPPGCL, CSPGCL, APGENCO, TSGENCO, KPCL, TANGEDCO, JUUNL, OHPC, WBSEDCL & APGCL.

2.2 Sector-wise and Region Wise Performance of H. E. Stations

Sector-wise and Region-wise generation performance of H. E. Stations during 2024-25 is given in Table S-4 & S-5. It is seen that there was excess generation as compared to target in State Sector. The overall generation of Central Sector hydro stations remained above the targets.

TABLE S-4

SECTOR-WISE GENERATION PERFORMANCE OF HYDRO STATIONS (2024-25 VIS-À-VIS 2023-24)

Sl. No.	Sector	Capacity as on 31.03.2025 (MW)	Generation					
			Target (MU)		Actual (MU)		Surplus (+)/ Shortfall (-) in %	
			2024-25	2023-24	2024-25	2023-24	2024-25	2023-24
1	Central	16342.70	61363.00	65585.00	59246.61	58145.82	-3.23	-11.34
2	State	27454.45	69543.00	75469.00	73831.17	61667.62	5.68	-18.29
3	Private	3931.00	16803.00	15646.00	15556.20	14240.46	-7.97	-8.98
	Total	**47728.17**	**147709.00**	**156700**	**148633.98**	**134053.90**	**0.63**	**-14.45**

TABLE S-5

GENERATION PERFORMANCE – REGION-WISE (2024-25 VIS-À-VIS 2023-24)

Sl. No.	Sector	Capacity as on 31.03.2025 (MW)	Generation					
			Target (MU)		Actual (MU)		Surplus (+)/ Shortfall (-) in %	
			2024-25	2023-24	2024-25	2023-24	2024-25	2023-24
1	Northern	20474.27	80886.00	77797.00	76489.47	58145.82	-5.44	-11.34
2	Western	7392.00	16573.00	15491.00	19689.91	61667.62	18.81	-18.29
3	Southern	11847.15	30878.00	31078.00	33966.57	14240.46	10.00	-8.98
4	Eastern	5987.75	12220.00	20178.00	11216.85	17785.34	-8.21	11.86
5	North-Eastern	2027.00	7152.00	12156.00	7271.18	6283.71	1.67	-48.31
	Total	**47728.17**	**147709.00**	**157600.00**	**148633.98**	**134053.90**	**0.63**	**-14.45**

3.0 Outage Analysis

For outage data analysis during 2024-25, outage data of 216 H.E. Stations (above 25 MW capacity) covering 741 units and having an aggregate installed capacity of 47728.17 MW made available by various utilities have been considered for the purpose of this Review. Region-wise details of these 216 hydro power stations are given below in Table S-6.

TABLE S-6
REGION-WISE SUMMARY OF HYDRO-ELECTRIC STATIONS ANALYSED
(2024-25 VIS-A-VIS-2023-24)

Region	No. of Stations		No. of Units		Capacity (MW)	
	2024-25	2023-24	2024-25	2023-24	2024-25	2023-24
Northern	79	77	266	260	20474.27	19774.27
Western	28	28	101	101	7392.00	7392.00
Southern	71	69	250	246	11847.15	11747.15
Eastern	24	24	86	86	5987.75	5987.75
North Eastern	14	14	38	38	2027.00	2027.00
All India	**216**	**212**	**741**	**731**	**47728.17**	**46928.17**

3.1 Planned Maintenance

The number of H.E. Stations falling under various ranges of non-availability due to planned maintenance during the year 2024-25 VIS-A-VIS 2023-24 is summarized below in Table S-7.

TABLE S-7
NON-AVAILABILITY OF HE STATIONS DUE TO PLANNED OUTAGES
(2024-25 VIS-A-VIS 2023-24)

% Non-Availability due to planned maintenance	2024-25				2023-24			
	Stations		Capacity		Stations		Capacity	
	No.	% of Total	MW	% of Total	No.	% of Total	MW	% of Total
≤ 5	125	57.87	29875.97	62.60	125	58.96	29204.07	62.23
>5 to 10	51	23.61	11051.60	23.16	45	21.23	7524.10	16.03
>10 to 15	22	10.19	3591.85	7.53	22	10.38	6211.00	13.24
>15 to 20	6	2.78	2240.00	4.69	8	3.77	1679.00	3.58
>20 to 25	1	0.46	80.00	0.17	4	1.89	265.00	0.56
>25 to 30	1	0.46	132.00	0.28	4	1.89	1562.00	3.33
above 30	10	4.63	756.75	1.59	4	1.89	483.00	1.03
Total	**216**	**100**	**47728.17**	**100**	**212**	**100**	**46928.17**	**100**

It could be seen from above that 125 nos. (57.87% of total) hydro-electric stations had non-availability factor less than or equal to 5% due to planned maintenance during 2024-25 as compared to 125 nos. (58.96% of total) during 2023-24.

Non-availability due to planned maintenance was more than 30% at 10 nos. (4.63% of total) H.E. Stations during 2024-25 and which was 4 nos. (1.89% of total) in 2023-24. The details of these stations for 2024-25 is given below in Table S-8.

TABLE S-8

H.E. STATIONS HAVING HIGH PLANNED MAINTENANCE FOR THE PERIOD: (2024-25)

Sl. No	Name of Station/Utility	Capacity (MW)	N.A. due to P.M.* (%)	Reasons
1	CHIPLIMA HPS / OHPC	72.00	33.333	CAPITAL/3 YEARLY MTCE.
2	DHAKRANI HPS / UJVNL	33.75	31.941	RENOVATION/MODERNISATION
3	DIKCHU HPS / SKPPPL	96.00	72.002	PAINTING OTHERS
4	KHONDONG HPS / NEEPCO.	50.00	98.355	R AND M WORKS
4	KHOPOLI HPS / TATA MAH.	72.00	66.667	ANNUAL MAINTENANCE
6	KUTTIYADI HPS / KSEB	75.00	33.369	RENOVATION/MODERNISATION
7	LIGANAMAKKI HPS / KPCL	55.00	50.00	TURBINE
8	SEWA-II HPS / NHPC	120.00	33.333	BUTTERFLY VALVE
9	SIVASAMUNDRUM HPS / KPCL	42.00	37.656	PAINTING OTHERS
10	UPPER SINDH-II HPS / JKSPDC	105.00	47.67	ANNUAL MAINTENANCE

*** N.A.** -Non availability, **P.M.-** Planned Maintenance

42.13% of stations had operational availability lower than 95% on account of planned maintenance. These utilities, therefore, need to improve their O&M practices to bring down their total outages.

It is observed from above that stations may be having high planned maintenance outages on account of ageing, O&M management issues, etc. Further, those stations which are having continuously high planned maintenance/forced outages over past few years may be requiring major repair & maintenance works or Renovation & Modernisation (R&M) works for improving the availability, reliability & security of the plant besides providing life extension where the assets have outlived their useful life.

The duration of various types of periodic planned maintenance varied considerably from station to station. Details of average time taken for various types of maintenance are given in Table S-9.

TABLE S-9

AVERAGE DURATION OF VARIOUS TYPES OF PLANNED MAINTENANCE FOR THE PERIOD: (2024-25)

S. NO	Type of Maintenance	No. of Units	Duration (Hours)	
			Max. for any unit	Average
1	ANNUAL MAINTENANCE	127	8760.00	823.69
2	AUXILIARY SYSTEM	7	397.48	61.77
3	BUTTERFLY VALVE	14	8760.00	700.94
4	CAPITAL/3 YEARLY MTCE.	157	8760.00	575.37
5	DESILING CHAMBER	5	170.10	104.32
6	FIREBAY/RESERVOIR	1	783.65	783.65
7	GENERATOR	42	3254.40	122.63
8	GENERATOR TRANSFORMER	28	2206.00	253.81
9	HEAD RACE TUNNEL / HEAD RACE CHANNEL /POWER CHANNEL	7	5719.00	1094.13
10	INSPECTION /MTCE	2	21.00	10.85
11	MISCELLANEOUS	17	35.13	7.10
12	MONTHLY MAINTENANCE	33	2015.75	165.89
13	OTHER EQUIPMENT	14	234.13	36.95
14	OTHER PLANNED MAINTENANCE WORKS	58	734.50	139.82
15	PAINTING OTHERS	57	8760.00	1234.60
16	PLANNED MAINTENANCE	130	2939.43	336.41
17	PRESSURE SHAFT/PENSTOCK	12	225.52	118.82
18	R AND M WORKS	2	840.00	8615.90
19	RENOVATION/MODERNISATION	15	8760.00	1422.71
20	ROUTINE MAINTENANCE	11	12.43	10.81
21	STATOR	3	1726.77	1131.25
22	SURGE SHAFT	2	126.00	79.47
23	SWITCHING EQUIPMENT	12	120.28	38.34
24	TESTING/CHECKING	5	1742.32	371.50
25	TRI/TRC/DRAFT TUBE	10	232.56	79.61
26	TURBINE	13	8760.00	836.85
27	TURBINE MISC/GOVERNOR	48	3042.50	316.26

It has been observed that there were wide variations in the time taken at different hydro units for the same type of periodic maintenance. The reasons for this can be attributed to following factors.

- The nature and the extent of work involved may vary from unit to unit.
- Availability of spare parts could be a constraint at some units.
- The working of the agency entrusted with the maintenance work could be different.
- Administrative and procedural difficulties may be faced at some of the stations

However, the analysis of outage data indicates there is enough scope of considerable reduction in outage duration of units by adopting best management practices including planning and contract management.

Summary of planned maintenance carried out on various equipments like generators, turbine and other equipments during 2024-25 vis-à-vis 2023-24 is given below in Table S-10.

TABLE S-10

DURATION OF PLANNED MAINTENANCE FOR GENERATOR, TURBINE & OTHER EQUIPMENTS FOR THE PERIOD (2024-25 VIS-A-VIS 2023-24)

Sl. No.	Equipment	Duration (Hours)			
		Maximum Hours for any unit		Average Hours	
		2024-25	2023-24	2024-25	2023-24
1	GENERATOR	3254.40	867.58	122.63	90.21
2	TURBINE	8760.00	7401.17	836.85	659.31
3	OTHER EQUIPMENT	234.13	2333.83	36.95	307.57

It is observed that planned outages in 2024-25 vis-a-vis 2023-24 have increased on account of generator and turbine whereas the same have decreased on account of other equipment.

3.2 Forced Outage

The summary of forced outages caused due to break-down of generator, turbine and other equipment during 2024-25 Vis-a-Vis 2023-24 is given below in Table S-11.

TABLE S-11

FORCED OUTAGES DUE TO GENERATOR, TURBINE & OTHER EQUIPMENT FAULTS
(2024-25 VIS-A-VIS 2023-24)

Sl. No.	Equipment	Forced Outage (Hours)		% of total Forced Outage		Increase/ Decrease viz-z-viz 2023-24
		2024-25	2023-24	2024-25	2023-24	
1	GENERATOR	45874.72	38428.21	38.12	29.30	-19.38
2	TURBINE	46521.55	48240.64	38.67	36.78	3.55
3	CIVIL STRUCTURE	3695.91	31294.60	3.07	23.86	88.19
4	OTHER EQUIPMENT	24226.26	13203.02	20.14	10.07	-83.49
	Total	**120318.44**	**131166.46**	**100.00**	**100.00**	**8.27**

It is observed that forced outages in 2024-25 vis-a-vis 2023-24 have increased on account of generator and other equipment whereas the same have decreased on account of turbine and civil structures.

3.3 Operational Availability

The number of H.E. Stations falling under various ranges of operating availability during the year 2024-25 is summarized below in Table S-12.

TABLE S-12
OPERATING AVAILABILITY OF H.E. STATIONS
(PERIOD: 2024-25)

Operating Availability (%)	No. of Stations	% of total Stations	Installed Capacity (MW)	% of total Installed Capacity
>=95%	103	47.69	24510.41	51.35
>=90 to 95	55	25.46	12375.00	25.93
>=85 to 90	23	10.65	4569.05	9.57
>=80 to 85	9	4.17	2670.00	5.59
<80	26	12.04	3603.70	7.55
Total	**216**	**100.00**	**47728.16**	**100.00**

Operating availability of 35 nos. H.E. stations (16.20% of total H.E. Stations) was below 85% (6273.7 MW) due to planned maintenance (capital overhauling, R&MU works, annual maintenance etc.) carried out for long duration and forced outages (turbine vibration, repair of runner/underwater parts, fire at cable gallery etc.) in these H.E. Stations.

Region-wise planned maintenance, forced outages and operating availability of H.E. units for 2024-25 is indicated below in Table S-13.

TABLE S-13

AVAILABILITY OF UNITS - REGION-WISE
PERIOD: 2024-25

Sl. No.	Region	No. of Units	Installed Capacity (MW)	Planned Maintenance %	Forced Outage %	Operating Availability (%)
1	Northern	266	20474.26	6.68	1.66	91.65
2	Western	101	7392.00	5.14	2.27	92.60
3	Southern	250	11847.15	5.90	3.36	90.73
4	Eastern	86	5987.75	8.91	6.17	84.93
5	North Eastern	38	2027.00	10.38	5.02	84.60
	All India	**741**	**47728.16**	**6.66**	**3.02**	**90.32**

On analyzing various types of planned shutdowns, it may be concluded that: Generating units installed in North-Eastern Region accounted for maximum non-availability due to planned maintenance (10.38%) whereas generating units installed in Western Region accounted for the least non-availability due to planned maintenance (5.14%) as indicated in Table S-13 above.

CHAPTER-1

HYDRO-ELECTRIC POTENTIAL AND DEVELOPMENT

CHAPTER-1

HYDRO-ELECTRIC POTENTIAL AND DEVELOPMENT

1.1 Hydro-electric Potential

Reassessment studies of Hydro-electric Potential in various river basins of the country were carried out by Central Electricity Authority during the period 2017-23. The identified potential of H.E. schemes above 25 MW installed capacity works out to be 133410 MW from a total of 539 H.E. schemes.

As on 31.03.2025, H.E. Schemes having total installed capacity of 47728.17 MW (32.22%) including pumped storage stations of capacity of 4745.60 MW have already been developed and the schemes under construction account for capacity of 13237.5 MW (9.92%), (excluding PSP of 8950 MW). As such, about 56.99% identified capacity is yet to be harnessed. Summary of the status of Hydro-electric Potential development in the country is indicated in **Tables 1.1, and 1.2** respectively as well as shown in **Exhibits 1.1 and 1.2.**

TABLE 1.1

REGION-WISE/STATE-WISE STATUS OF HYDRO-ELECTRIC CAPACITY
(In terms of Installed Capacity-above 25 MW as on 31.03.2025)

Region/ State	Identified Capacity as per reassessment (1978-87)	Exploitable Identified Capacity as per Reassessment Study (2017-23)	Capacity Developed		Capacity Under construction	
	(MW)	(MW)	(MW)	(%)	(MW)	(%)
NORTHERN						
Jammu & Kashmir	11567	12264.5	3360.0	27.40	3051.5	24.88
Ladhak	2046	707.0	89.0	12.59	0.0	0.00
Himachal Pradesh	18470	18305.0	10981.02	59.99	1746.0	9.54
Punjab	971	1300.73	1096.30	84.28	206.0	15.84
Haryana	64	0.0	0.0	0	0.0	0.00
Rajasthan	483	411.0	411.0	100.00	0.0	0.00
Uttarakhand	17998	13481.35	4035.35	29.93	1264.0	9.38
Uttar Pradesh	664	501.6	501.60	100.00	0.0	0.00
Sub Total(NR)	**52263**	**46971.2**	**20474.3**	**43.59**	**6268**	**13.34**
WESTERN						
Madhya Pradesh	1970	2819.0	2235.0	79.28	0.0	0.00
Chhattisgarh	2202	1311.0	120.0	9.15	0.0	0.00
Gujarat	590	550.0	550.0	100.00	0.0	0.00
Maharashtra	3314	3144.0	2647.0	84.19	0.0	0.00
Goa	55	0.0	0.0	0.00	0.0	0.00
Sub Total (WR)	**8131**	**7824.0**	**5552.0**	**70.96**	**0.0**	**0.0**
EASTERN						
Jharkhand	582	300.0	210.0	70.00	0.0	0.00
Bihar	40	130.1	0.0	0.00	0.0	0.00
Odisha	2981	2824.50	2154.55	76.28	0.0	0.00

West Bengal	2829	809.2	441.20	54.52	120.0	14.83
Sikkim	4248	6051.0	2282.0	37.71	620.0	10.25
Sub Total (ER)	**10680**	**10114.8**	**5087.75**	**50.30**	**740.0**	**7.32**
NORTH-EASTERN						
Meghalaya	2298	2026.0	322.0	15.89	0.0	0.00
Tripura	0	0.0	0.0	0.00	0.0	0.00
Manipur	1761	615.0	105.0	17.07	0.0	0.00
Assam	650	643.0	350.0	54.43	120.0	18.66
Nagaland	1452	325.0	75.0	23.08	0.0	0.00
Arunachal Pradesh	50064	50394.0	1115.0	2.21	4880.0	9.68
Mizoram	2131	1926.7	60.0	3.11	0.0	0.00
Sub Total (NER)	**58356**	**55929.7**	**2027.0**	**3.62**	**5000.0**	**8.94**
ALL INDIA	**145320**	**133410**	**42982.57**	**32.22**	**13237.5**	**9.92**

Note:-1. In addition to above 8 PSP (4745.6 MW) are under operation, 7 PSP (8950 MW) are under construction, 4 PSP (4100 MW) are Concurred by CEA & 49 PSP (66010 MW) are under S&I.

TABLE 1.2

STATUS OF H.E. POTENTIAL DEVELOPMENT - BASIN-WISE
(In terms of Installed Capacity-above 25 MW as on 31.03.2025)

River Basin	Identified Capacity as per Reassessment Study	Exploitable Identified Capacity as per Reassessment Study	Capacity Developed		Capacity Under Construction	
	(MW)	(MW)	(MW)	(%)	(MW)	(%)
Indus	33028	32322.23	15355.32	47.51	5003.5	15.48
Ganga	20252	15591.25	5747.15	36.86	1264.0	8.11
Central Indian River System	3868	4498.50	3159.80	70.24	0.0	0.00
West Flowing Rivers System	8997	7001.95	5784.35	82.61	40.0	0.57
East Flowing Rivers System	13775	11269.40	8248.95	73.20	1190.0	10.56
Brahmaputra	65400	62726.70	4687.00	7.47	5740.0	9.15
Total	**145320**	**133410**	**42982.57**	**32.22**	**13237.5**	**9.92**

Note:- In addition to above 8 PSP (4745.6 MW) are under operation, 7 PSP (8950 MW) are under construction, 4 PSP (4100 MW) are Concurred by CEA & 49 PSP (66010 MW) are under S&I.

1.2 Growth of Installed Capacity

A small Hydro-Electric Plant (130 KW) established near Darjeeling in 1897 ushered the beginning of hydro-electric power development in the country. Since then, development of hydro-electric power in the country has made rapid strides. The hydel installed capacity which was only 508 MW in 1947 with 12 H.E. Stations, 51 units and the maximum unit size of 22 MW at Bhira H.E. station under Tata, has risen to 47728.17 MW (as on 31.03.2025) from H.E. stations above 25 MW capacity. The maximum unit size now is 250 MW at Koyna Stage-IV under MAHAGENCO, Nathpa Jhakri under SJVNL, Tehri Stage-I under THDC and Karcham Wangtoo of JSW Energy.

Contribution of electricity generation from Hydro Electric Power Stations has risen from 2.2 BU during 1947 to about 148.63 BU in 2024-25. Hydro generation during 2024-25 was about 14.58 BU (i.e. 10.88%) more than the generation of 134.05 BU during 2023-24.

1.3 Share of Hydro-electric Installed Capacity & Generation

The installed capacity of Hydro-Electric Stations viz-à-viz total capacity, the contribution in generation by hydro-electric plants and trend of hydro capacity & generation over the years are indicated in **Table-1.3** and at **Exhibits 1.3, 1.4 and 1.5**. From **Table 1.3**, it may be observed that the overall share of hydro in terms of installed capacity in the country rose from 37.3% at the end of 1947 to 50.61% during 1962-63. However, thereafter, the share of hydro progressively decreased and is presently 10.04% at the end of 2024-25. The generation from hydro stations during the year 2024-25 accounted for 9.47% of the total energy generation in the country.

TABLE 1.3

HYDRO-ELECTRIC CAPACITY & GENERATION VIS-À-VIS TOTAL CAPACITY & GENERATION

Year	Installed Capacity			Generation		
	Total (MW)	Hydro (MW)	Hydro as % of Total	Total (MU)	Hydro (MU)	Hydro as % of Total
1950	1713	560	32.63	5106	2519	49.33
1955-56	2886	1061	36.76	9145	4295	46.97
1960-61	4653	1917	41.20	16937	7837	46.27
1962-63	5801	2936	50.61	22365	11805	52.78
1965-66	9027	4124	45.68	32890	15225	46.29
1968-69	12957	5907	45.59	47434	20723	43.69
1973-74	16664	6966	41.80	66689	28972	43.44
1978-79	26680	10833	40.60	102523	47159	46.00
1979-80	28448	11384	40.02	104627	45478	43.47
1984-85	42585	14460	33.96	156859	53948	34.39
1989-90	63636	18307	28.77	245437	62116	25.31
1991-92	69065	19194	27.79	287028	72757	25.35
1996-97	85795	21658	25.24	395889	68901	17.40
1997-98	89203	21904	24.58	421748	74582	17.68
1998-99	92269	22479	24.10	447464	82923	18.53
1999-00	97837	23857	24.37	481128	80755	16.78
2000-01	101450	25153	24.75	499429	74362	14.89
2001-02	105046	26269	25.01	515066	73759	14.32
2002-03	107877	26767	24.81	531607	63834	12.01
2003-04	112684	29507	26.19	558113	73775	13.22
2004-05	118419	30936	26.12	587416	84495	14.38
2005-06	124287	32326	26.01	624631	101293	16.22
2006-07	132321	34662	26.19	659513	113359	17.19
2007-08	143061	37002	25.86	704469	123424	17.52
2008-09*	147917	36846	24.91	714653	109840	15.37
2009-10*	159398	36863	23.13	763429	103916	13.61
2010-11*	173626	37567	21.64	805532	114257	14.18
2011-12*	199877	38990	19.51	871602	130510	14.97
2012-13*	223344	39491	17.68	907262	113720	12.53
2013-14*	243029	40531	16.68	961552	134848	14.02
2014-15*	267637	41267	15.42	1043665	129244	12.38
2015-16*	302088	42783	14.16	1102578	121377	11.01
2016-17*	326849	44478	13.61	1154524	122378	10.60
2017-18*	344002	45293	13.17	1201528	126123	10.50
2018-19*	356100	45399	12.75	1244930	134894	10.84
2019-20*	370106.46	45699.2	12.34	1244989.43	155769.12	12.51
2020-21*	382151.22	46209.20	12.09	1225842.14	150299.52	12.26
2021-22*	399496.61	46722.50	11.69	1313453.87	151627.33	11.54
2022-23*	416058.89	46850.17	11.26	1414171	162099	11.46
2023-24*	434195.13	46928.17	10.81	1508277	134053.90	8.89
2024-25*	475211.80	47728.16	10.04	1569204.57	148633.98	9.47

* Capacity above 25 MW only has been considered.

1.4 Monitored Hydro Installed Capacity

For generation performance, the monitored hydro-electric installed capacity in the country as on 31.03.2025 was 47728.17 MW (above 25 MW capacity). Region-wise summary of the hydel installed capacity is given in **Table 1.4**. Region-wise, type-wise and construction-wise categorization of stations is given in **Annex-1.1** while Sector-wise/Utility-wise and Station-wise/State-wise details of installed capacity are given in **Annex 1.2 to 1.4**.

TABLE 1.4

REGION-WISE SUMMARY OF HYDRO-ELECTRIC INSTALLED CAPACITY (Above 25 MW capacity as on 31.03.2025)

S.No.	Region	No. of Units	Installed Capacity (MW)
1.	Northern	266	20474.27
2.	Western	101	7392.00
3.	Southern	250	11847.15
4.	Eastern	86	5987.75
5.	North-Eastern	38	2027.00
Total		**741**	**47728.17**

Capacity-wise grouping of H.E. Stations as on 31.03.2025 is given in **Annex- 1.5**. It is observed that 106 stations with installed capacity above 100 MW constitute more than 86.56% of the overall hydro capacity.

4 H.E. Generating units having installed capacity of 800 MW were added during the year 2024-25. Details of these units are given in **Annex-1.6**.

Share of hydro installed capacity and hydro generation viz-a-viz total installed capacity and total generation in the country as on 31.03.2025 was 10.04% and 9.47% respectively. These details are indicated in **Exhibits 1.6 and 1.7.** Sector-wise distribution of hydro installed capacity (MW) in Central, Private and State Sectors was 34.24%, 8.24% and 57.52% respectively. Sector-wise distribution of hydro generation (MU) in Central, Private and State sectors was 39.86%, 10.47% and 49.67% respectively. These details are illustrated in **Exhibits 1.8 & 1.9**.

1.5 Hydro Generating Units : Indigenous and imported

As on 31.03.2025, there were 741 hydro generating units in operation at 216 stations comprising of indigenous and imported units as per details given in **Table 1.5** below. The domestic supplier, BHEL, has a share of about 43.69% of total capacity for both turbines & generators whereas other domestic suppliers together have a meagre share of about 7.29% of total capacity.

Among the imported turbines and generators, Japan, UK and Canada are the top three suppliers of turbines and generators in term of numbers but capacity-wise, Japan, Canada and USSR are the top three suppliers.

TABLE 1.5

HYDRO GENERATING UNITS INDIGENOUS/IMPORTED FROM VARIOUS COUNTRIES AS ON 31-03-2025

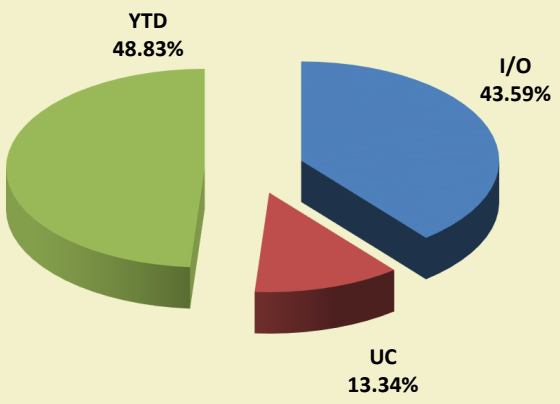
Name of the Country	Turbine supplied				Generator supplied			
	Units		Capacity (MW)		Units		Capacity (MW)	
A-Indigenous	**No.**	**% of Total**	**MW**	**% of Total**	**No.**	**% of Total**	**MW**	**% of Total**
BHEL	318	42.91	20850.30	43.69	318	42.91	20850.30	43.69
Others*	54	7.29	3395.50	7.11	54	7.29	3395.50	7.11
SUB TOTAL	**372**	**50.20**	**24245.80**	**50.80**	**372**	**50.20**	**24245.80**	**50.80**
B-Imported								
Switerzerland	21	2.83	797.85	1.67	21	2.83	797.85	1.67
Canada	44	5.94	3132.00	6.56	44	5.94	3132.00	6.56
U.S.A	9	1.21	351.00	0.74	6	0.81	351.00	0.74
USSR	26	3.51	2804.00	5.87	26	3.51	2804.00	5.87
France	31	4.18	2179.20	4.57	15	2.02	2179.20	4.57
U.K	63	8.50	1242.10	2.60	63	8.50	1242.10	2.60
Japan	76	10.26	6416.20	13.44	76	10.26	6416.20	13.44
Other	99	13.36	6560.00	13.74	118	15.92	6560.00	13.74
SUB TOTAL	**369**	**49.80**	**23482.35**	**49.20**	**369**	**49.80**	**23482.35**	**49.20**
TOTAL	**741**	**100**	**47728.15**	**100**	**741**	**100**	**47728.15**	**100**

REGION-WISE STATUS OF HYDRO-ELECTRIC CAPACITY AS ON 31.03.2025

EXHIBIT 1.1

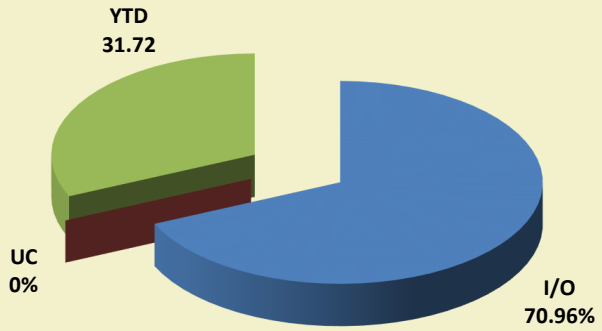
I/O=In Operation UC=Under Construction YTD= Yet to be Developed

NORTHERN REGION



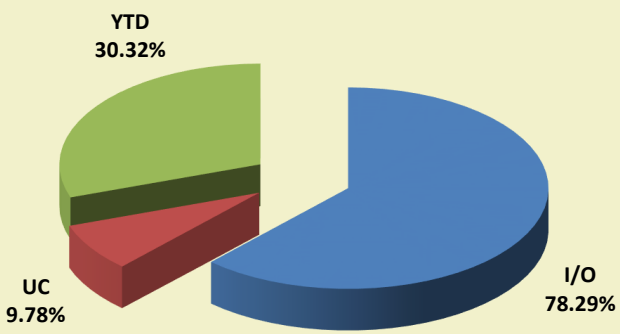
TOTAL ASSESSED (Above 25 MW) : - 52263 MW

WESTERN REGION



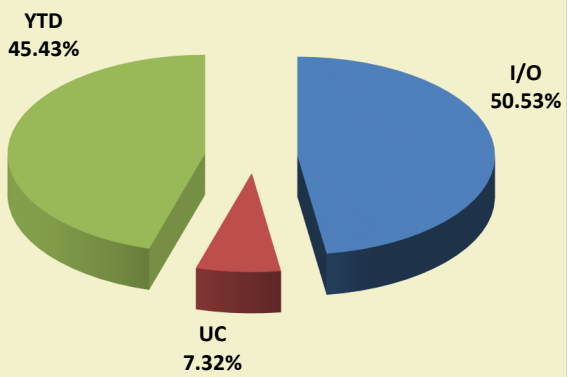
TOTAL ASSESSED (Above 25 MW) : - 8131 MW

SOUTHERN REGION



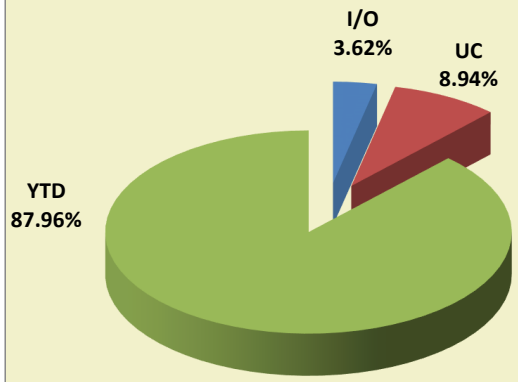
TOTAL ASSESSED (Above 25 MW): - 15890 MW

EASTERN REGION



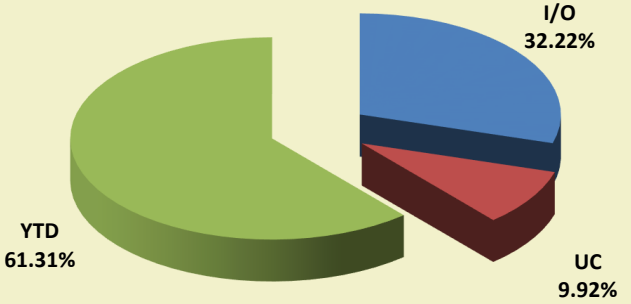
TOTAL ASSESSED (Above 25 MW) : - 10680 MW

NORTH EASTERN



TOTAL ASSESSED (Above 25 MW) : - 58356 MW

ALL INDIA



TOTAL ASSESSED (Above 25 MW) : - 145320 MW

EXHIBIT 1.2

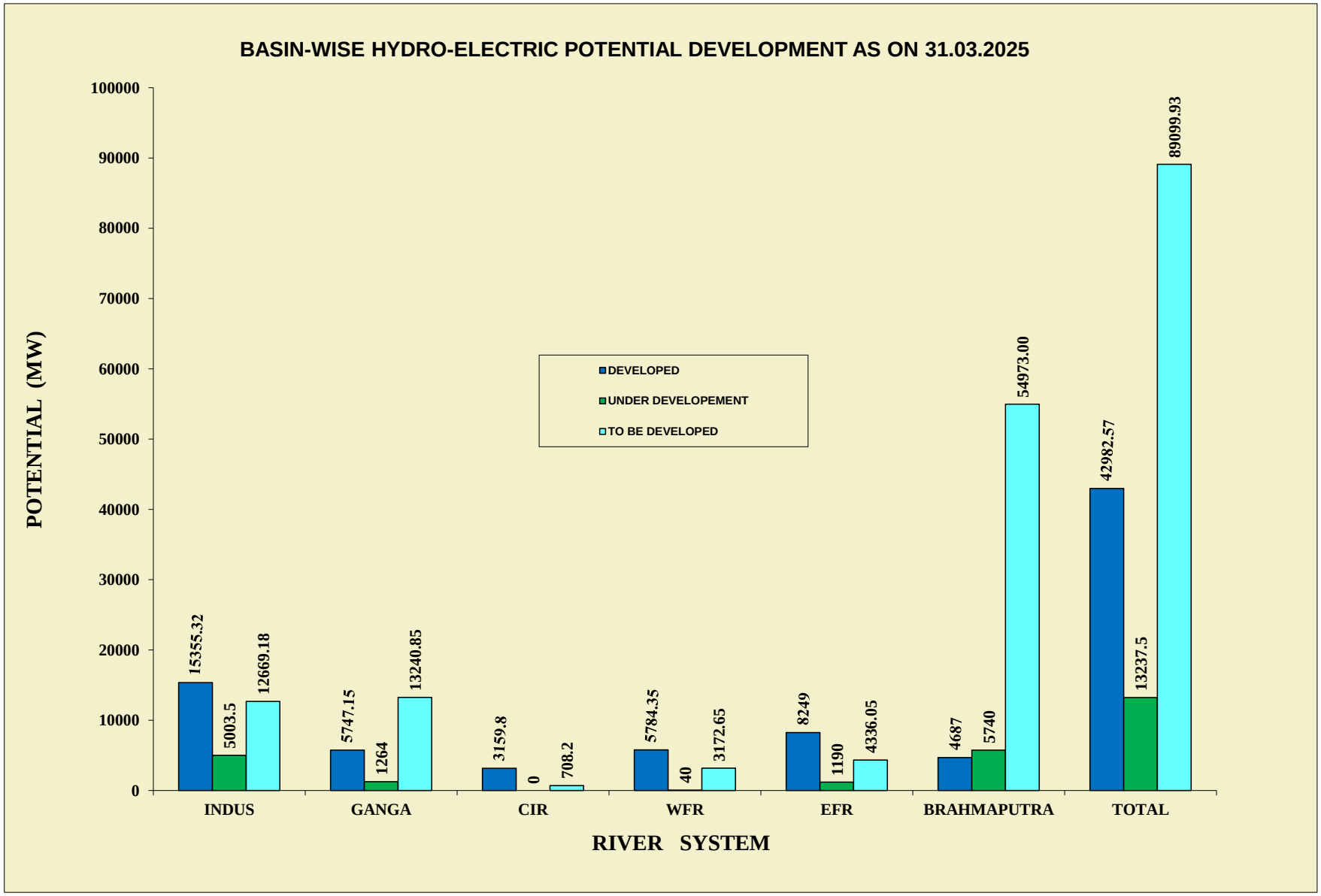

BASIN-WISE HYDRO-ELECTRIC POTENTIAL DEVELOPMENT AS ON 31.03.2025
POTENTIAL (MW)
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
DEVELOPED
UNDER DEVELOPEMENT
TO BE DEVELOPED
15355.32
5003.5
12669.18
5747.15
1264
13240.85
3159.8
0
708.2
5784.35
40
3172.65
8249
1190
4336.05
4687
5740
54973.00
42982.57
13237.5
89099.93
INDUS
GANGA
CIR
WFR
EFR
BRAHMAPUTRA
TOTAL
RIVER SYSTEM

EXHIBIT 1.3

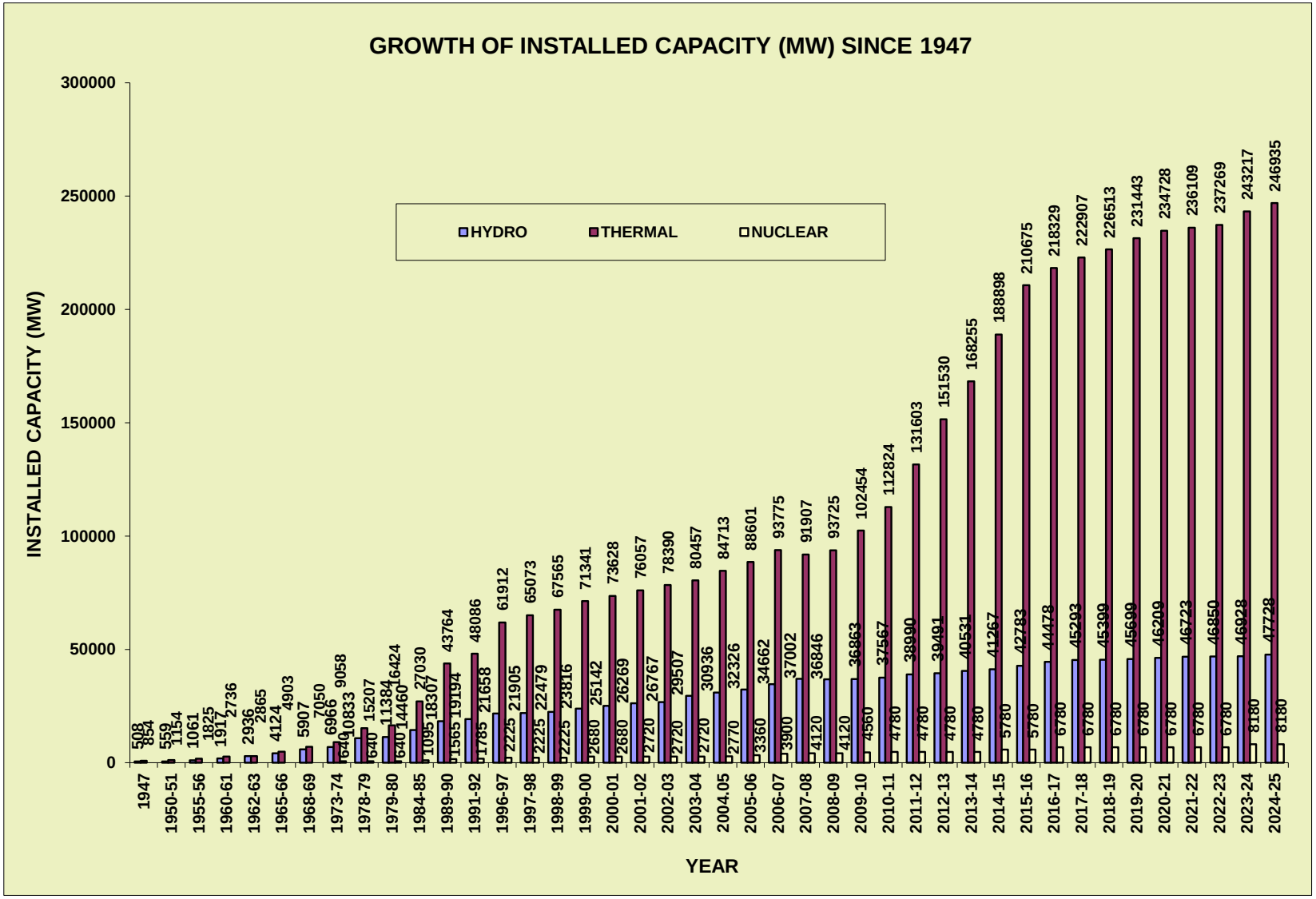
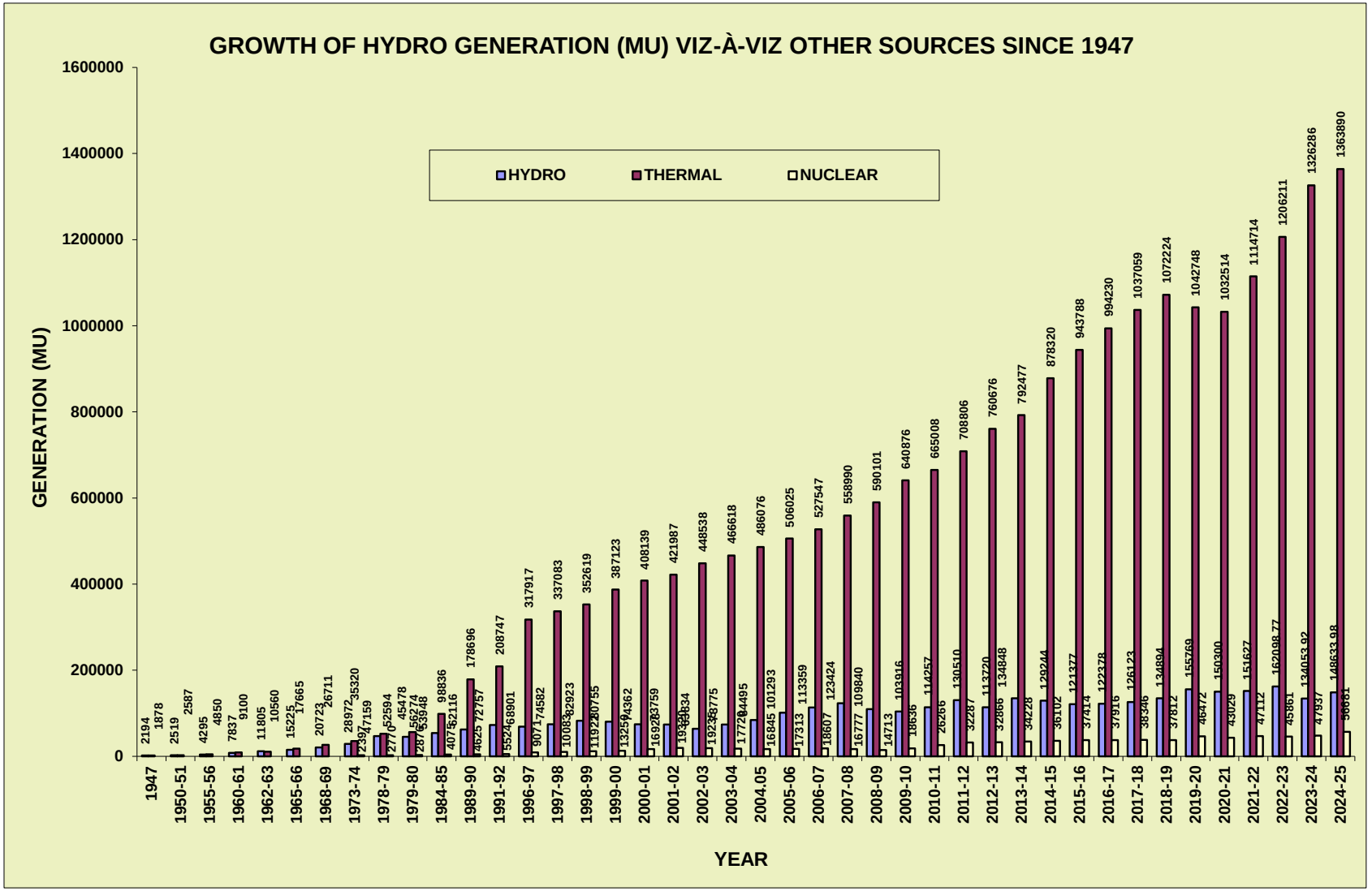

GROWTH OF INSTALLED CAPACITY (MW) SINCE 1947
INSTALLED CAPACITY (MW)
YEAR
HYDRO
THERMAL
NUCLEAR
300000
250000
200000
150000
100000
50000
0
1947 508 854
1950-51 559 1154
1955-56 1061 1825
1960-61 1917 2736
1962-63 2936 2865
1965-66 4124 4903
1968-69 5907 7050
1973-74 6966 9058
1640 10833
1978-79 15207
640
1979-80 11384 16424
640 14460
1984-85 27030
1095 18307
1989-90 43764
1565 19194
1991-92 48086
1785 21658
1996-97 61912
2225 21905
1997-98 65073
2225 22479
1998-99 67565
2225 23816
1999-00 71341
2680 25142
2000-01 73628
2680 26269
2001-02 76057
2720 26767
2002-03 78390
2720 29507
2003-04 80457
2720 30936
2004.05 84713
2770 32326
2005-06 88601
3360 34662
2006-07 93775
3900 37002
2007-08 91907
4120 36846
2008-09 93725
4120 36863
2009-10 102454
4360 37567
2010-11 112824
4780
2011-12 131603
4780 38990
2012-13 151530
4780 39491
2013-14 168255
4780 40531
2014-15 188898
4780 41267
2015-16 210675
5780 42783
2016-17 218329
5780 44478
2017-18 222907
6780 45293
2018-19 226513
6780 45399
2019-20 231443
6780 45699
2020-21 234728
6780 46209
2021-22 236109
6780 46723
2022-23 237269
6780 46850
2023-24 243217
6780 46928
2024-25 246935
8180 47728
8180

EXHIBIT 1.4


GROWTH OF HYDRO GENERATION (MU) VIZ-À-VIZ OTHER SOURCES SINCE 1947
HYDRO
THERMAL
NUCLEAR
GENERATION (MU)
YEAR
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
1947
1950-51
1955-56
1960-61
1962-63
1965-66
1968-69
1973-74
1978-79
1979-80
1984-85
1989-90
1991-92
1996-97
1997-98
1998-99
1999-00
2000-01
2001-02
2002-03
2003-04
2004.05
2005-06
2006-07
2007-08
2008-09
2009-10
2010-11
2011-12
2012-13
2013-14
2014-15
2015-16
2016-17
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2019-20
2020-21
2021-22
2022-23
2023-24
2024-25

EXHIBIT-1.5

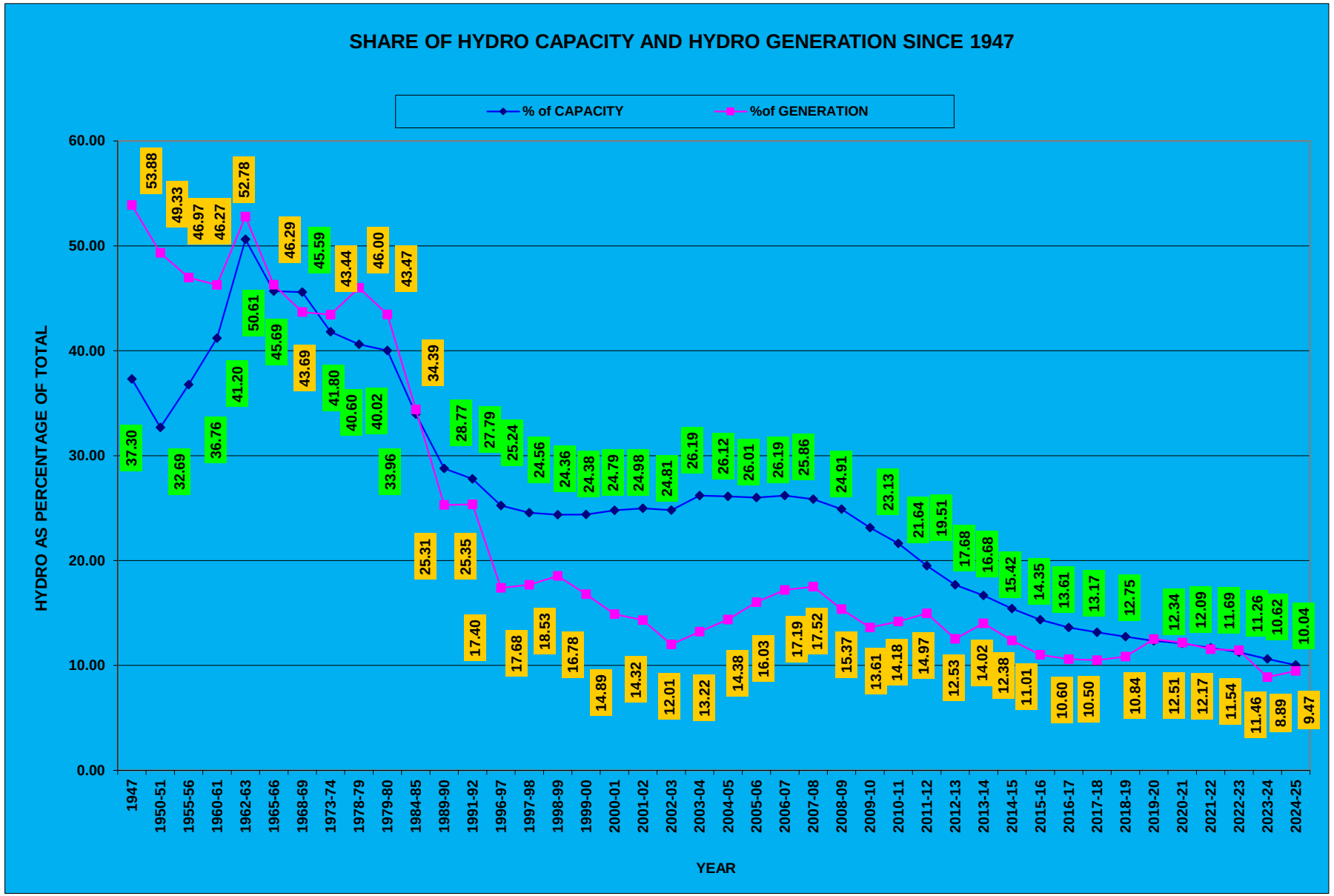

SHARE OF HYDRO CAPACITY AND HYDRO GENERATION SINCE 1947
% of CAPACITY
%of GENERATION
HYDRO AS PERCENTAGE OF TOTAL
YEAR
60.00
50.00
40.00
30.00
20.00
10.00
0.00
1947 1950-51 1955-56 1960-61 1962-63 1965-66 1968-69 1973-74 1978-79 1979-80 1984-85 1989-90 1991-92 1996-97 1997-98 1998-99 1999-00 2000-01 2001-02 2002-03 2003-04 2004-05 2005-06 2006-07 2007-08 2008-09 2009-10 2010-11 2011-12 2012-13 2013-14 2014-15 2015-16 2016-17 2017-18 2018-19 2019-20 2020-21 2021-22 2022-23 2023-24 2024-25
37.30 32.69 36.76 41.20 50.61 45.69 43.69 41.80 40.60 40.02 33.96 28.77 27.79 25.24 24.56 24.36 24.38 24.79 24.98 24.81 26.19 26.12 26.01 26.19 25.86 24.91 23.13 21.64 19.51 17.68 16.68 15.42 14.35 13.61 13.17 12.75 12.34 12.09 11.69 11.26 10.62 10.04
53.88 49.33 46.97 46.27 52.78 46.29 45.59 43.44 46.00 43.47 34.39 25.31 25.35 17.40 17.68 18.53 16.78 14.89 14.32 12.01 13.22 14.38 16.03 17.19 17.52 15.37 13.61 14.18 14.97 12.53 14.02 12.38 11.01 10.60 10.50 10.84 12.51 12.17 11.54 11.46 8.89 9.47

EXHIBIT-1.6

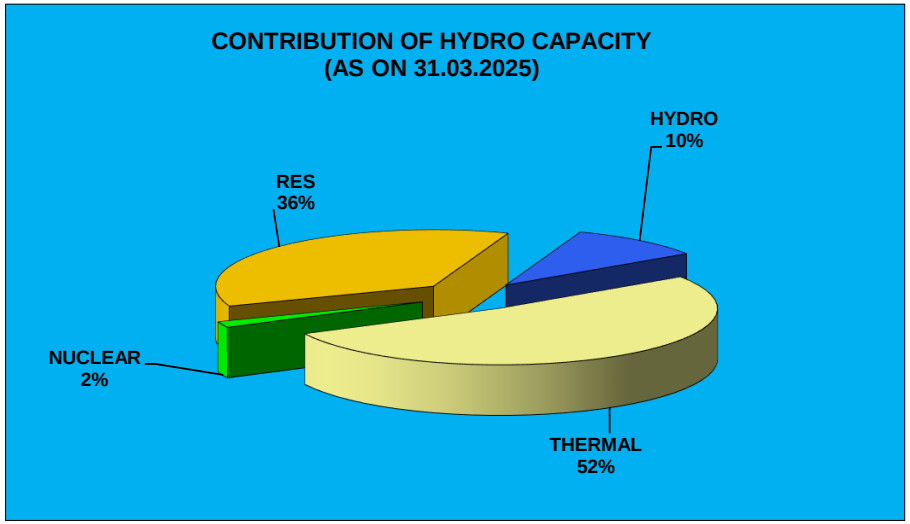


EXHIBIT-1.7

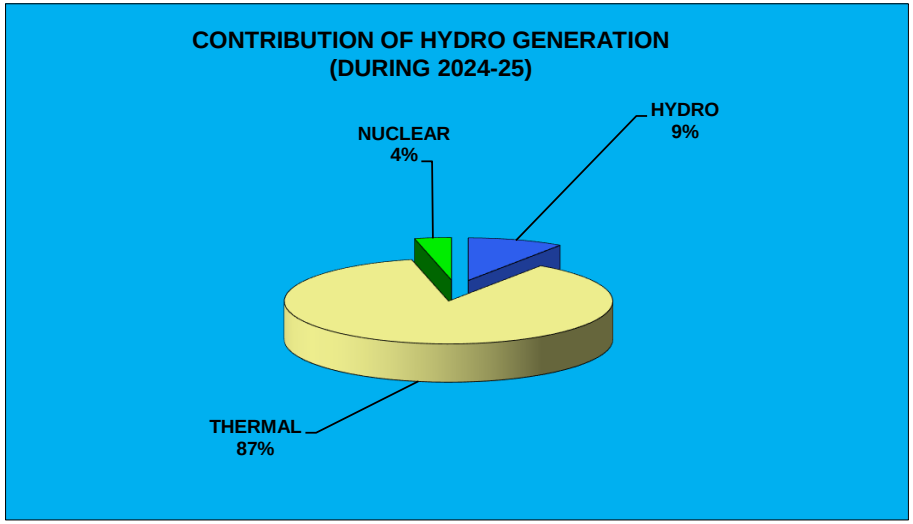


EXHIBIT-1.8

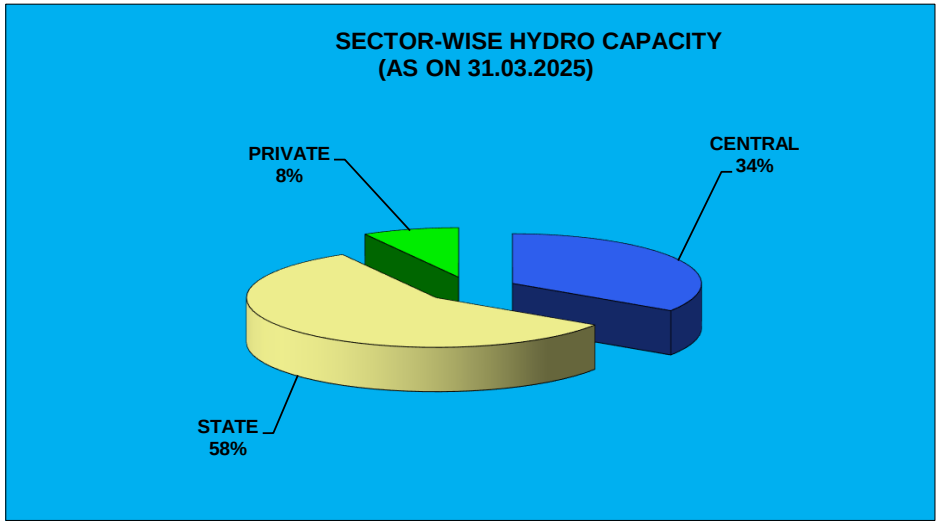
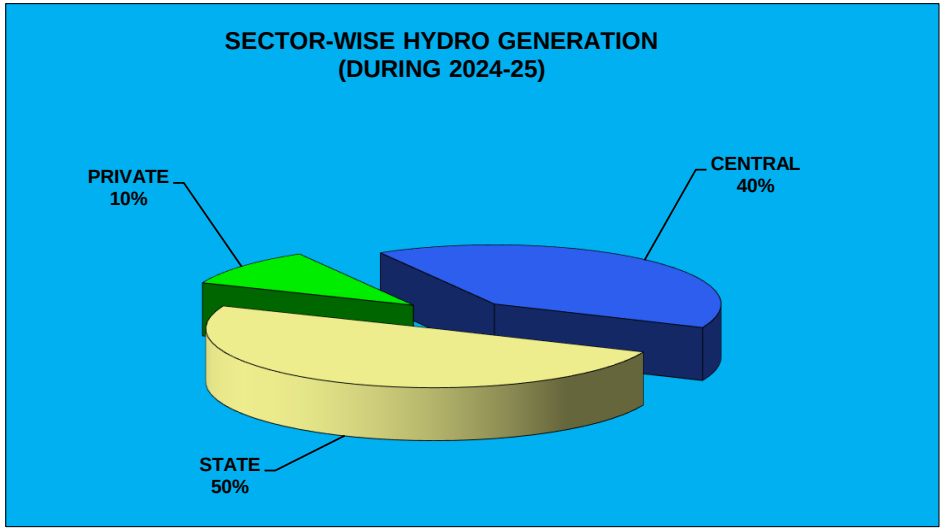


EXHIBIT-1.9



Region-wise/Sector-wise Installed Capacity of H.E. Stations in the Country

(Above 25 MW Capacity)

(As on 31.03.2025)

Region	Design Energy (MU)	Conventional H.E. Stations			Pumped Storage Projects (PSP)			Conventioal+ Pumped Storage Projects (PSP)		
		No. of Stations	No. of Units	Installed Capacity (MW)	No. of Stations	No. of Units	Installed Capacity (MW)	No. of Stations	No. of Units	Installed Capacity (MW)
Northern	80647.18	79	266	20474.27	0	0	0.00	79	266	20474.27
Western	16607.21	24	88	5552	4	13	1840	28	101	7392.00
Southern	34164.75	69	233	9842	3	17	2006	72	250	11847.15
Eastern	20204.86	23	82	5088	1	4	900	24	86	5987.75
North-Eastern	9412.73	14	38	2027	0	0	0.00	14	38	2027.00
Total	**161036.73**	**209**	**707**	**42982.57**	**8**	**34**	**4745.60**	**216 ***	**741**	**47728.17**

NOTE: *The total No. of H.E. Stations are 216 as N. J. Sagar H.E. Station (Southern Region) is having 1 conventional unit and remaining 7 units are PSP.

Note: Following one Hydro Station have conventional as well as PSP capacity:

Sl. No.	Station	State/Region	Installed Capacity (MW)	
			Conventional	PSP
1	N. J. Sagar	Telangana/ Southern	1 x 110 =110	7 x 100.8=705.60

Sector-wise Installed Capacity of H.E. Stations in the Country
(Above 25 MW Capacity)

Sector	Design Energy (MU)	No. of Utilities	No. of Stations	No. of Units	Installed Capacity (MW)
Central	63999.58	8	44	168	16342.7
State	80900.47	25	151	513	27454.5
Private	15740.25	17	22	60	3931.00
Total	**160640.30**	**50**	**216***	**741**	**47728.17**

*** Total number of H.E. Stations are 216 as N. J. Sagar H.E. Station (Southern Region) is having one Conventional unit and remaining seven units are PSP.**

Categorisation of H.E. Stations (Installed Capacity)

1. Operation-wise

(As on 31.03.2025)

Sector	RoR		RoR (P)		Storage (S)						Total	
	No.	MW	No.	MW	S (P)		S (MPP)		PSP		No.	MW
					No.	MW	No.	MW	No.	MW		
Central	10	2793.50	19	7263.00	6	1725.00	9	4561.20	0	0.00	44	16342.70
State	17	1032.15	51	7710.00	33	6547.30	43	7569.40	7	4595.60	151	27454.45
Private	5	892.00	13	2592.00	3	297.00	0	0.00	1	150.00	22	3931.00
Total (Nos./ MW Capacity)*	**32**	**4717.65**	**83**	**17565.00**	**42**	**8569.30**	**52**	**12130.60**	**8**	**4745.60**	**216***	**47728.15**
% of Total	**15.1**	**9.88**	**39.2**	**36.80**	**19.81**	**17.95**	**24.53**	**25.42**	**3.77**	**9.94**	**100**	**100**

* The total No. of H.E. Stations are 216 as N. J. Sagar H.E. Station (Southern Region) is having 1 conventional unit and remaining 7 units are PSP.

2. Power House Construction-wise

Sector	Surface		Underground		Total	
	No.	MW	No.	MW	No.	MW
Central	27	8054.5	17	8288.2	**44**	**16342.70**
State	131	19482.45	20	7972	**151**	**27454.45**
Private	14	1673	8	2258	**22**	**3931**
Total (Nos./MW Capacity)*	**172**	**29209.95**	**45**	**18518.2**	**216***	**47728.15**
% of Total	**81.13**	**61.20**	**21.23**	**38.80**	**100**	**100**

Abbreviations:

RoR - Run of River type

RoR (P) – Run of River with Pondage

S (P) – Storage (Conventional) for Power Generation purpose only

S (MPP) – Storage (Conventional) for Multipurpose Project

PSP – Pumped Storage Project

Sector-wise/Utility-wise Installed Capacity of H.E. Stations in the Country
(Above 25 MW Capacity)

(As on 31.03.2025)

Sl. No.	Name of Sectors/Utilities	No. of Stations	No. of Units	Installed Capacity (MW)	Design Energy (MU)
Central Sector					
1	BBMB	6	28	2956.3	9515.0
2	NHPC	21	73	6051.20	27804.94
3	SJVNL	3	14	1972.02	8755.58
4	NTPC	1	4	800.00	3054.79
5	THDC	2	8	1400.00	3952.00
6	NHDC	2	16	1520.00	3146.57
7	DVC	2	5	143.20	374.00
8	NEEPCO	7	20	1500.00	7397.04
	Sub Total Central	**44**	**168**	**16342.72**	**63999.92**
Private Sector					
1	MPCL	1	2	86.00	370.93
2	EPPL	1	2	100.00	403.00
3	GBHPPL	1	2	70.00	291.73
4	ADHPL	1	2	192.00	678.18
5	IAEPL	1	3	36.00	157.82
6	HBPCL	2	7	1345.00	5344.06
7	JPPVL	1	4	400.00	1774.42
8	AHPC	1	4	330.00	1396.84
9	TPCL	4	15	447.00	1220.00
10	DLHP	1	1	34.00	50.00
11	GIPL	1	2	110.00	537.81
12	DEPL	1	2	96.00	459.02
13	SKPPPL	1	2	96.00	431.00
14	SEPL	1	2	97.00	425.05
15	RENEW POWER PVT. LTD.	1	3	99.00	473.00

Sl. No.	Name of Sectors/Utilities	No. of Stations	No. of Units	Installed Capacity (MW)	Design Energy (MU)
16	MBPCL	1	2	113.00	434.00
17	HSPPL	1	2	100.00	524.00
18	GMR	1	3	180.00	769.39
	Sub Total Private	**22**	**60**	**3931**	**15740**
State Sector					
1	HPSEBL	4	12	372.00	1691.62
2	HPPCL	3	8	406.00	955.03
3	JKSPDCL	4	12	1110.00	4833.30
4	PSPCL	8	25	1051.00	4207.00
5	RRVUNL	4	11	411.00	1046.00
6	UPJVNL	4	15	501.60	1707.00
7	UJVNL	11	36	1372.15	5223.34
8	GSECL	2	8	540.00	1598.00
9	SSNNL	2	11	1450.00	3848.00
10	MPPGCL	8	23	875.00	2561.64
11	CSPGC	1	3	120.00	245.00
12	MAHAGENCO	8	24	2406.00	3938.00
13	APGENCO	8	34	1796.75	5738.00
14	TSGENCO	7	36	2405.60	5045.85
15	KPCL	14	66	3617.20	12981.00
16	KSEB	16	51	1964.15	6721.90
17	TANGEDCO	27	69	2178.20	4348.00
18	JUUNL	2	2	130.00	149.00
19	OHPC	6	31	2039.80	5676.00
20	WBSEDCL	3	12	986.00	1610.00
21	SUL	1	6	1200.00	5214.00
22	APGCL	1	2	100.00	390.00
23	MePGCL	5	13	322.00	1177.69
24	BVPC	1	3	100.00	391.19
	Sub Total State	**150**	**513**	**27454.45**	**81296.56**
	Total	**216**	**741**	**47728.17**	**161036.73**

State-wise/Station-wise Installed Capacity of H.E. Stations in the Country
(Above 25 MW Capacity)

(As on 31.03.2025)

Sl No.	Utilities/Stations	No. of Stations	No. of Units	Type of Project	No. of Units x Capacity (MW)	Capacity (MW)	Design Energy (MU)	Year of Commissioning
	Conventional H E Stations							
	Northern Region							
	BBMB							
	HIMACHAL PRADESH							
1	Bhakra Left	1	5	MP	(1X126+4X126)	630.00	3924.00	1960 (108 MW) 1961 (486 MW)
2	Bhakra Right	1	5	MP	(5X157)	785.00		1966 (314 MW) 1967 (314 MW) 1968 (157 MW)
3	Dehar	1	6	R(P)	(6X165)	990.00	3110.00	1977 (165 MW) 1978 (165 MW) 1979 (330 MW) 1983 (330 MW)
4	Pong	1	6	MP	(6X66)	396.00	1123.00	1978 (198 MW) 1979 (66 MW) 1982 (66 MW) 1983 (66 MW)
	Sub-Total BBMB (HP)	**4**	**22**			**2801.00**	**8157.00**	
	NHPC							
5	Baira Siul	1	3	R(P)	(3X60)	180.00	779.28	1980 (132 MW) 1981 (66 MW)
6	Chamera-I	1	3	S	(3X180)	540.00	1664.56	1994 (540 MW)
7	Chamera-II	1	3	R(P)	(3X100)	300.00	1499.89	2003 (200 MW) 2004 (100 MW)
8	Chamera-III	1	3	R(P)	(3X77)	231.00	1108.00	2012 (231 MW)
9	Parbati-III	1	4	R(P)	(4X130)	520.00	1977.23	2014 (520 MW)
10	Parabati-II	1	3	R	3x200	600.00	3124.60	2024 (600MW)
	Sub-Total HP	**6**	**19**			**2371.00**	**10153.56**	
	SJVNL							
11	Nathpa Jhakri	1	6	R(P)	(6X250)	1500.00	6612.00	2003 (500 MW) 2004 (1000 MW)
12	Rampur	1	6	R	(6X68.67)	412.02	1878.08	2014 (412 MW)
	Total SJVNL	**2**	**12**			**1912.02**	**8490.08**	
	NTPC LTD.							
13	Koldam	1	4	S	(4X200)	800.00	3054.79	2015 (800 MW)
	Total NTPC LTD.	**1**	**4**			**800.00**	**3054.79**	
	Total Central Sector-HP	**13**	**57**			**7884.02**	**29855.43**	
	HPSEBL							
14	Bassi	1	4	R(P)	(4X16.5)	66.00	346.77	1970 (33 MW) 1971 (16.5 MW) 1981 (16.5 MW)
15	Giri Bata	1	2	R(P)	(2X30)	60.00	240.00	1978 (60 MW)
16	Larji'	1	3	R(P)	(3X42)	126.00	586.85	2006 (126 MW)
17	Sanjay	1	3	R(P)	(3X40)	120.00	518.00	1989 (120 MW)
	Total HPSEBL	**4**	**12**			**372.00**	**1691.62**	
	HPPCL							

State-wise/Station-wise Installed Capacity of H.E. Stations in the Country
(Above 25 MW Capacity)

(As on 31.03.2025)

Sl No.	Utilities/Stations	No. of Stations	No. of Units	Type of Project	No. of Units x Capacity (MW)	Capacity (MW)	Design Energy (MU)	Year of Commissioning
18	Integrated Kashang	1	3	R (P)	(3X65)	195	245.80	2016 (130 MW) 2017 (65 MW)
19	Sainj	1	2	R(P)	(2X50)	100	323.23	2017 (100 MW)
20	Sawra Kuddu	1	3	R	(3X37)	111	386.00	2020 (111 MW)
	Total HPPCL	**3**	**8**			**406**	**955.03**	
	PSPCL							
21	Shanan	1	5	R(P)	(1X50)+(4X15)	110.00	585.00	1932 (60 MW) 1982 (50 MW)
	Sub Total PSPCL-HP	**1**	**5**			**110.00**	**585.00**	
	Beas Valley Power. Corp. Ltd. (BVPC)							
22	UHL HEP	1	3	R	3x33.33	100.00	391.19	2024 (100MW)
	Total BVPV	**1**	**3**			**100.00**	**391.19**	
	Total State Sector	**9**	**28**			**988.00**	**3622.84**	
	Private Sector							
	MPCL							
23	Malana	1	2	R(P)	(2X43)	86.00	370.93	2001 (86 MW)
	Total MPCL	**1**	**2**			**86.00**	**370.93**	
	GBHPPL							
24	Budhil	1	2	R(P)	(2X35)	70.00	291.73	2012 (70 MW)
	Total GBHPPL	**1**	**2**			**70.00**	**291.73**	
	EPPL							
25	Malana-II	1	2	R(P)	(2X50)	100.00	403.00	2011 (100 MW)
	Total EPPL	**1**	**2**			**100.00**	**403.00**	
	IA Energy							
26	Chanju-I	1	3	R(P)	(3X12)	36.00	157.82	2017 (12 MW)
	Total IA Energy	**1**	**3**			**36.00**	**157.82**	
27	Allain Duhangan	1	2	R(P)	(2X96)	192.00	678.18	2010 (192 MW)
	Total ADHPL	**1**	**2**			**192.00**	**678.18**	
	HBPCL							
28	Baspa	1	3	R(P)	(3X100)	300.00	1213.00	2003 (300 MW)
	Total HBPCL	**1**	**3**			**300.00**	**1213.00**	
	JSW							
29	Karcham Wangtoo	1	4	R(P)	(4X261.25)	1045.00	4131.06	2011 (1000 MW)
	Total JSW	**1**	**4**			**1045.00**	**4131.06**	
	HSPPL							
30	Sorang	**1**	**2**	R	(2x50)	100.00	524.00	2021 (100 MW)
	Total HSPPL	**1**	**2**			**100.00**	**524.00**	
	GMR							
31	Bajoli Holi	**1**	**3**	R	(3x60)	180.00	**769.39**	Mar 2022 (180)
	Total GMR	**1**	**3**			**180.00**	**769.39**	
	Total PVT	**9**	**23**			**2109**	**8539**	
	Total Himachal Pradesh	**31**	**108**			**10981.02**	**42017.38**	
	JAMMU & KASHMIR							

State-wise/Station-wise Installed Capacity of H.E. Stations in the Country
(Above 25 MW Capacity)

(As on 31.03.2025)

Sl No.	Utilities/Stations	No. of Stations	No. of Units	Type of Project	No. of Units x Capacity (MW)	Capacity (MW)	Design Energy (MU)	Year of Commissioning
	JKSPDC							
32	Baglihar-I	1	3	R(P)	(3X150)	450.00	2643.00	2008 (450 MW)
33	Baglihar-II	1	3	R(P)	(3X150)	450.00	1302.30	2015 (450 MW)
34	Lower Jhelum	1	3	R(P)	(3X35)	105.00	533.00	1978 (35 MW) 1979 (70 MW)
35	Upper Sindh-II	1	3	R(P)	(3X35)	105.00	355.00	2000 (35 MW) 2001 (35 MW) 2002 (35 MW)
	Total JKSPDC	**4**	**12**			**1110.00**	**4833.30**	
	NHPC							
36	Dulhasti	1	3	R(P)	(3X130)	390.00	1907.00	2007 (390 MW)
37	Salal-I&II	1	6	R	(3X115)	690.00	3082.00	1987 (345 MW) 1993 (115 MW) 1994 (115 MW) 1995 (115 MW)
38	Uri-I	1	4	R	(4X120)	480.00	2587.38	1996 (120 MW) 1997 (360 MW)
39	Uri-II	1	4	R	(4X60)	240.00	1124.00	2013 (180 MW) 2014 (60 MW)
40	Sewa-II	1	3	R(P)	(3X40)	120.00	533.52	2010 (120 MW)
41	Keshanganga	1	3	R(P)	(3X110)	330.00	1705.62	2018 (330 MW)
	Sub-Total NHPC	**6**	**23**			**2250.00**	**10939.52**	
	Total Jammu & Kashmir	**10**	**35**			**3360**	**15772.82**	
	LADAKH							
	NHPC							
42	Chutak	1	4	R	(4X11)	44.00	213.00	2012 (33 MW) 2013 (11 MW)
43	Nimoo Bazgo	1	3	R(P)	(3X15)	45.00	239.00	2013 (45 MW)
	Sub-Total NHPC	**2**	**7**			**89.00**	**452.00**	
	Total Ladakh	**2**	**7**			**89**	**452**	
	PUNJAB							
	PSPCL							
44	Anandpur Sahib-I	1	2	R	(2X33.5)	67.00	909.00	1985 (67 MW)
45	Anandpur Sahib-I	1	2	R	(2X33.5)	67.00		1985 (67 MW)
46	Mukerian-I	1	3	R	(3X15)	45.00	1206.00	1983 (45 MW)
47	Mukerian-II	1	3	R	(3X15)	45.00		1988 (30 MW) 1989 (15 MW)
48	Mukerian-III	1	3	R	(3X19.5)	58.50		1989 (58.50 MW)
49	Mukerian-IV	1	3	R	(3X19.5)	58.50		1989 (58.50 MW)
50	Ranjit Sagar	1	4	S	(4X150)	600.00	1507.00	2000 (600 MW)
	Total PSPCL	**7**	**20**			**941.00**	**3622.00**	
	BBMB							
51	Ganguwal	1	3	R	(2X24.2)+(1X29.25)	77.65	1358	1955 (48.4 MW) 1962 (29.25 MW)
52	Kotla	1	3	R	(2X24.2)+(1X29.25)	77.65		1956 (48.4 MW) 1961 (29.25 MW)
	Sub-Total BBMB (Punjab)	**2**	**6**			**155.30**	**1358.00**	

State-wise/Station-wise Installed Capacity of H.E. Stations in the Country
(Above 25 MW Capacity)

(As on 31.03.2025)

Sl No.	Utilities/Stations	No. of Stations	No. of Units	Type of Project	No. of Units x Capacity (MW)	Capacity (MW)	Design Energy (MU)	Year of Commissioning
	Total Punjab	**9**	**26**			**1096.30**	**4980.00**	
	Rajasthan							
	RRVUNL							
53	Jawahar Sagar	1	3	R(P)	(3X33)	99.00	298.00	1973 (99 MW)
54	Mahi Bajaj-I	1	2	MP	(2X25)	50.00	289.00	1986 (50 MW)
55	Mahi Bajaj-II	1	2	R(P)	(2X45)	90.00		1989 (90 MW)
56	R P Sagar	1	4	MP	(4X43)	172.00	459.00	1968 (129 MW) 1969 (43 MW)
	Total RRVUNL	**4**	**11**			**411.00**	**1046.00**	
	Total Rajasthan	**4**	**11**			**411.00**	**1046.00**	
	UTTARAKHAND							
	NHPC							
57	Dhauli Ganga	1	4	R(P)	(4X70)	280.00	1134.69	2005 (280 MW)
58	Tanakpur	1	3	R	(3X31.4)	94.20	452.19	1992 (94.2 MW)
	Sub-Total NHPC	**2**	**7**			**374.20**	**1586.88**	
	THDC							
59	Tehri St-I	1	4	MP	(4X250)	1000.00	2797.00	2006 (500 MW) 2007 (500 MW)
60	Koteshwar	1	4	R(P)	(4X100)	400.00	1155.00	2011 (200 MW) 2012 (200 MW)
	Total THDC	**2**	**8**			**1400.00**	**3952.00**	
	SJVNL							
61	Naitwar Mori	**1**	**2**	R	(4X30)	60.00	265.50	**2023 (60 MW)**
	Total SJVNL	**1**	**2**			**60.00**	**265.5**	
	Sub Total Central	**5**	**17**			**1834.20**	**5804.38**	
	State Sector							
	UJVNL							
62	Chibro (Yamuna)	1	4	R(P)	(4X60)	240.00	750.00	1975 (180 MW) 1976 (60 MW)
63	Chilla	1	4	R	(4X36)	144.00	725.00	1980 (108 MW) 1981 (36 MW)
64	Dhakrani	1	3	R	(3X11.25)	33.75	169.00	1965 (11.25 MW) 1966 (11.25 MW) 1970 (11.25 MW)
65	Dhalipur	1	3	R	(3X17)	51.00	192.00	1965 (17 MW) 1966 (17 MW) 1970 (17 MW)
66	Khatima	1	3	R	(3X13.8)	41.40	208.00	1955 (13.8 MW) 1956 (27.6 MW)
67	Khodri	1	4	R(P)	(4X30)	120.00	345.00	1984 (120 MW)
68	Kulhal	1	3	R	(3X10)	30.00	164.00	1975 (30 MW)
69	Maneri Bhali-I	1	3	R(P)	(3X30)	90.00	395.00	1984 (90 MW)
70	Maneri Bhali-II	1	4	R(P)	(4X76)	304.00	1566.10	2008 (304 MW)
71	Ramganga	1	3	MP	(3X66)	198.00	334.00	1975 (66 MW) 1976 (66 MW) 1977 (66 MW)
72	Vyasi	1	2	R(P)	(2x60)	120.00	375.24	22.04.2022 (U#2) 24.05.2022 (U#1)
	Total UJVNL	**11**	**36**			**1372.15**	**5223.34**	
	Private Sector							

State-wise/Station-wise Installed Capacity of H.E. Stations in the Country
(Above 25 MW Capacity)

(As on 31.03.2025)

Sl No.	Utilities/Stations	No. of Stations	No. of Units	Type of Project	No. of Units x Capacity (MW)	Capacity (MW)	Design Energy (MU)	Year of Commissioning
	AHPC							
73	Shrinagar	1	4	R(P)	(4X82.50)	330.00	1396.84	2015 (330 MW)
.	**JPPVL**							
74	Vishnu Prayag	1	4	R	(4X100)	400.00	1774.42	2006 (400 MW)
	ReNew Power Private Limited							
75	Singoli Bhatwari	1	3	R	(3x33)	99.00	473.00	2020 (33 MW)
	Sub Total Private	**3**	**11**			**829.00**	**3644.26**	
	Total Uttarakhand	**19**	**64**			**4035.35**	**14671.98**	
	UPJVNL							
	UTTAR PRADESH							
76	Khara	1	3	R(P)	(3X24)	72.00	385.00	1992 (72 MW)
77	Matatila	1	3	MP	(3X10.2)	30.60	123.00	1965 (30.6 MW)
78	Obra	1	3	MP	(3X33)	99.00	279.00	1970 (66 MW) 1971 (33 MW)
79	Rihand	1	6	MP	(6X50)	300.00	920.00	1962 (250 MW) 1966 (50 MW)
	Total UPJVNL	**4**	**15**			**501.60**	**1707.00**	
	Total Northern Region	**79**	**266**			**20474.27**	**80647.18**	
	Western Region							
	MADHYA PRADESH							
	NHDC							
80	Indira Sagar	1	8	MP	(8X125)	1000.00	1980.00	2004 (875 MW) 2005 (125 MW)
81	Omkareshwar	1	8	MP	(8X65)	520.00	1166.57	2007 (520 MW)
	Sub-Total NHDC	**2**	**16**			**1520.00**	**3146.57**	
	Total Central	**2**	**16**			**1520.00**	**3146.57**	
	MPPGCL							
82	Bansagar Tons-I	1	3	R(P)	(3X105)	315.00	900.00	1991 (105 MW) 1992 (210 MW)
83	Bansagar Tons-III	1	2	R	(2X15)	30.00	113.00	2002 (30 MW)
84	Bansagar Tons-II	1	3	MP	(3X20)	60.00	143.00	2000 (20 MW) 2001 (20 MW) 2002 (20 MW)
85	Bargi	1	2	MP	(2X45)	90.00	508.08	1988 (90 MW)
86	Gandhi Sagar	1	5	MP	(5X23)	115.00	420.48	1960 (69 MW) 1963 (23 MW) 1966 (23 MW)
87	Madhikhera	1	3	MP	(3X20)	60.00	74.12	2006 (40 MW) 2007 (20 MW)
88	Rajghat	1	3	MP	(3X15)	45.00	87.60	1999 (45 MW)
	Sub-Total MPPGCL	**7**	**21**			**715.00**	**2246.28**	
	Total Madhya Pradesh	**9**	**37**			**2235.00**	**5392.85**	
	MAHARASHTRA							
	MAHAGENCO							

State-wise/Station-wise Installed Capacity of H.E. Stations in the Country
(Above 25 MW Capacity)

(As on 31.03.2025)

Sl No.	Utilities/Stations	No. of Stations	No. of Units	Type of Project	No. of Units x Capacity (MW)	Capacity (MW)	Design Energy (MU)	Year of Commissioning
89	Bhira Tail Race	1	2	R(P)	(2X40)	80.00	75.00	1987 (40 MW) 1988 (40 MW)
90	Koyna DPH	1	2	S	(2X18)	36.00	146.00	1980 (18 MW) 1981 (18 MW)
91	Koyna-I&II	1	8	S	(4X70)+(4X80)	600.00	3030.00	1962 (140 MW) 1963 (140 MW) 1966 (240 MW) 1967 (80 MW)
92	Koyna-III	1	4	R(P)	(4X80)	320.00		1975 (160 MW) 1977 (80 MW) 1978 (80 MW)
93	Koyna-IV	1	4	S	(4X250)	1000.00		1999 (500 MW) 2000 (500 MW)
94	Tillari	1	1	R(P)	(1X60)	60.00	133.00	1986 (60 MW)
95	Vaitarna	1	1	S	(1X60)	60.00	144.00	1976 (60 MW)
	Sub-Total MAHAGENCO	**7**	**22**			**2156.00**	**3528.00**	
	MPPGCL							
96	Pench	1	2	MP	(2X80)	160.00	315.36	1986 (80 MW) 1987 (80 MW)
	Sub-Total MPPGCL	**1**	**2**			**160.00**	**315.36**	
	Total State SECTOR	**8**	**24**			**2316.00**	**3843.36**	
	Private Sector							
	Dodson-Lindblom Hydro Power Pvt. Ltd.(DLHP)							
97	Bhandardhara St-II	1	1	R(P)	(1X34)	34.00	50.00	1996 (34 MW)
	Sub-Total DLHP	**1**	**1**			**34.00**	**50.00**	
	Tata Power Company							
98	Bhira	1	6	S	(6X25)	150.00	775.00	1927 (125 MW) 1949 (25 MW)
99	Bhivpuri	1	5	S	(3X24) + (2X1.5)	75.00	220.00	1997 (3 MW) 1998 (48 MW) 1999 (24 MW)
100	Khopoli	1	3	S	(3X24)	72.00	225.00	2001 (24 MW) 2002 (24 MW) 2003 (24 MW)
	Sub-Total TPCL	**3**	**14**			**297.00**	**1220.00**	
	Total Pvt. (Maharashtra)	**4**	**15**			**331.00**	**1270.00**	
	Total Maharashtra	**12**	**39**			**2647.00**	**5113.36**	
	CHHATISGARG							
	CSPGCL							
	State Sector							
101	Hasdeobango	1	3	MP	(3X40)	120.00	245.00	1994 (80 MW) 1995 (40 MW)
	Total CSPGCL	**1**	**3**			**120.00**	**245.00**	
	Total Chhatisgarh	**1**	**3**			**120.00**	**245.00**	
	GUJARAT							
	State Sector							

State-wise/Station-wise Installed Capacity of H.E. Stations in the Country
(Above 25 MW Capacity)

(As on 31.03.2025)

Sl No.	Utilities/Stations	No. of Stations	No. of Units	Type of Project	No. of Units x Capacity (MW)	Capacity (MW)	Design Energy (MU)	Year of Commissioning
	GSECL							
102	Ukai	1	4	MP	(4X75)	300.00	1080.00	1974 (150 MW) 1975 (75 MW) 1976 (75 MW)
	Sub-Total GSECL	**1**	**4**			**300.00**	**1080.00**	
	SSNNL							
103	Sardar Sarovar CHPH	1	5	R(P)	(5X50)	250.00	213.00	2004 (250 MW)
	Sub-Total SSNNL	**1**	**5**			**250.00**	**213.00**	
	Total Gujarat	**2**	**9**			**550.00**	**1293.00**	
	Total Western Region	**24**	**88**			**5552.00**	**12044.21**	
	Southern Region							
	ANDHRA PRADESH							
	APGENCO							
	State Sector							
104	Lower Sileru	1	4	S	(4X115)	460.00	1070.00	1976 (230 MW) 1977 (115 MW) 1978 (115 MW)
105	N J Sagar RBC & EXT.	1	3	MP	(3X30)	90.00	156.00	1990 (30 MW) 1992 (60 MW)
106	Srisailam	1	7	MP	(7X110)	770.00	2900.00	1982 (220 MW) 1983 (110 MW) 1984 (110 MW) 1986 (220 MW) 1987 (110 MW)
107	Upper Sileru-I&II	1	4	S	(4X60)	240.00	529.00	1994 (60 MW) 1995 (60 MW)
108	N J Sagar TPD	1	2	R(P)	(2X25)	50.00	177.00	2017 (50 MW)
	Total APGENCO	**5**	**20**			**1610.00**	**4832.00**	
	Total Andhra Pradesh	**5**	**20**			**1610.00**	**4832.00**	
	TELANGANA							
	TSGENCO							
	State Sector							
109	Priyadarshni Jurala	1	6	R(P)	(6X39)	234.00	404.00	2008 (78 MW) 2009 (39 MW) 2010 (78 MW) 2011 (39 MW)
110	Pochampad	1	4	MP	(4X9)	36.00	147.00	1987-1988, 2010
111	N J Sagar	1	1	MP	(1X110)	110.00		1978 (110 MW)
112	N J Sagar LBC	1	2	R	(2X30)	60.00	104.00	1983 (60 MW)
113	Lower Jurala	1	6	R(P)	(6X40)	240.00	534.43	2015 (80 MW) 2016 (160 MW)
114	Pulinchinthala	1	4	R(P)	(4X30)	120.00	219.42	2016 (60 MW) 2017 (60 MW)
	Total TSGENCO	**6**	**23**			**800.00**	**1408.85**	
	Total Telangana	**6**	**23**			**800.00**	**1408.85**	
	KARNATAKA							
	KPCL							
	State Sector							

State-wise/Station-wise Installed Capacity of H.E. Stations in the Country
(Above 25 MW Capacity)

(As on 31.03.2025)

Sl No.	Utilities/Stations	No. of Stations	No. of Units	Type of Project	No. of Units x Capacity (MW)	Capacity (MW)	Design Energy (MU)	Year of Commissioning
115	Almatti	1	6	MP	(5X55)+(1X15)	290.00	483.00	2004 (70 MW) 2005 (220 MW)
116	Gerusoppa(Sharavathy Tail Race)	1	4	R(P)	(4X60)	240.00	622.00	2001 (180 MW) 2002 (60 MW)
117	Ghat Prabha	1	2	MP	(2X16)	32.00	131.00	1992 (32 MW)
118	Mahatma Gandhi (Jog)	1	8	S	(4X21.6)+(4X13.2)	139.20	118.00	1949 (26.4 MW) 1950 (13.2 MW) 1952 (65 MW) 2001 (13.2 MW) 2002 (21.6 MW)
119	Kadra	1	3	S	(3X50)	150.00	570.00	1997 (50 MW) 1999 (100 MW)
120	Kalinadi (Nagjhari)	1	6	S	(6X150)	900.00	3385.00	1979 (135 MW) 1980 (135 MW) 1981 (135 MW) 1982 (135 MW) 1983 (135 MW) 1984 (135 MW)
121	Kalinadi (Supa)	1	2	S	(2X50)	100.00	542.00	1985 (100 MW)
122	Kodasali	1	3	S	(3X40)	120.00	512.00	1998 (40 MW) 1999 (80 MW)
123	Lingnamakki	1	2	S	(2X27.5)	55.00	254.00	1979 (27.5 MW) 1980 (27.5 MW)
124	Munirabad	1	3	MP	(2X9)+(1X10)	28.00	66.00	1962 (18 MW) 1965 (10 MW)
125	Sharavathy	1	10	S	(10X103.5)	1035.00	4932.00	1964 (103.5 MW) 1965 (103.5 MW) 1967 (207 MW) 1968 (311 MW) 1971 (103.5 MW) 1976 (103.5 MW) 1977 (103.5 MW)
126	Sivasamundrum	1	10	R(P)	(4X6)+(6X3)	42.00	183.00	1922 (3 MW) 1923 (3 MW) 1924 (9 MW) 1925 (3 MW) 1928 (18 MW) 1934 (6 MW)
127	Varahi	1	4	R(P)	(4X115)	460.00	1060.00	1989 (115 MW) 1990 (115 MW) 2009 (230 MW)
128	Bhadra	1	3	MP	(2x12)+(1x2)	26.00	123.00	1965 (26 MW)
	Total KPCL	**14**	**66**			**3617.20**	**12981.00**	
	APGENCO							

State-wise/Station-wise Installed Capacity of H.E. Stations in the Country
(Above 25 MW Capacity)

(As on 31.03.2025)

Sl No.	Utilities/Stations	No. of Stations	No. of Units	Type of Project	No. of Units x Capacity (MW)	Capacity (MW)	Design Energy (MU)	Year of Commissioning
129	T B Dam	1	4	MP	(4X9)	36.00	236.00	1957 (18 MW) 1964 (18 MW)
130	Hampi	1	4	MP	(4X9)	36.00		1958 (18 MW) 1964 (18 MW)
	Sub-Total APGENCO	**2**	**8**			**72.00**	**236.00**	
	Total Karnataka	**16**	**74**			**3689.20**	**13217.00**	
	KERALA							
	KSEB							
	State Sector							
131	Idamalayar	1	2	MP	(2X37.5)	75.00	380.00	1987 (75 MW)
132	Idukki	1	6	MP	(6X130)	780.00	2398.00	1976 (390 MW) 1985 (130 MW) 1986 (260 MW)
133	Kakkad	1	2	R(P)	(2X25)	50.00	262.00	1999 (50 MW)
134	Kuttiyadi	1	3	MP	(3X25)	75.00	323.00	1972 (75 MW)
135	Kuttiyadi Extn.	1	1	MP	(1X50)	50.00		2001 (50 MW)
136	Kuttiyadi Additional Extn.	1	2	MP	(2X50)	100.00		2010 (100 MW)
137	Lower Periyar	1	3	R(P)	(3X60)	180.00	493.00	1997 (180 MW)
138	Nariamangalam	1	3	S	(3X17.55)	52.65	237.00	1961 (30 MW) 1963 (15 MW)
139	Pallivasal	1	6	S	(3X5)+(3X7.5)	37.50	284.00	1948 (7.5 MW) 1949 (7.5 MW) 1951 (7.5 MW) 2001 (15 MW)
140	Panniar	1	2	S	(2X15)	30.00	158.00	1963 (15 MW) 2001 (15 MW)
141	Poringalkuttu	1	4	S	(4X8)	32.00	170.00	1957 (8 MW) 1958 (8 MW) 1959 (8 MW) 1960 (8 MW)
142	Sabirigiri	1	6	S	(6X50)	300.00	1338.00	1960 (150 MW) 1967 (150 MW)
143	Sengulam	1	4	S	(4X12)	48.00	182.00	1954 (24 MW) 2001 (24 MW)
144	Sholayar	1	3	S	(3X18)	54.00	233.00	1956 (18 MW) 1968 (36 MW)
145	Thottiyar	1	2	R	(1x10+1x30)	40.00	99.00	2024 (40 MW)
146	Pallivasal Extention	1	2	S	2x30	60.00	164.90	2024(60MW)
	Total KSEB	**16**	**51**			**1964.15**	**6721.90**	
	Total Kerala	**16**	**51**			**1964.15**	**6721.90**	
	TAMILNADU							
	TANGEDCO							
147	Aliyar	1	1	MP	(1X60)	60.00	175.00	1970 (60 MW)
148	Bhavani Kattalai Barrage-I	1	2	R(P)	(2X15)	30.00	90.00	2006 (30 MW)

State-wise/Station-wise Installed Capacity of H.E. Stations in the Country
(Above 25 MW Capacity)

(As on 31.03.2025)

Sl No.	Utilities/Stations	No. of Stations	No. of Units	Type of Project	No. of Units x Capacity (MW)	Capacity (MW)	Design Energy (MU)	Year of Commissioning
149	Bhavani Kattalai Barrage-II	1	2	R(P)	(2X15)	30.00	100.00	2013 (30 MW)
150	Bhavani Kattalai Barrage-III	1	2	R(P)	(2X15)	30.00	80.00	2012 (15 MW) 2013 (15 MW)
151	Kodayar-I	1	1	MP	(1X60)	60.00	165.00	1970 (60 MW)
152	Kodayar-I	1	1	MP	(1X40)	40.00		1971 (40 MW)
153	Kundah-I	1	3	S	(3X20)	60.00	1387.00	1960 (40 MW) 1964 (20 MW)
154	Kundah-II	1	5	S	(5X35)	175.00		1960 (35 MW) 1961 (105 MW) 1964 (35 MW)
155	Kundah-III	1	3	S	(3X60)	180.00		1965 (120 MW) 1978 (60 MW)
156	Kundah-IV	1	2	S	(2X50)	100.00		1966 (50 MW) 1978 (50 MW)
157	Kundah-V	1	2	S	(2X20)	40.00		1964 (20 MW) 1988 (20 MW)
158	Lower Mettur-I	1	2	R(P)	(2X15)	30.00	252.00	1988 (30 MW)
159	Lower Mettur-II	1	2	R(P)	(2X15)	30.00		1988 (30 MW)
160	Lower Mettur-III	1	2	R(P)	(2X15)	30.00		1987 (15 MW) 1988 (15 MW)
161	Lower Mettur-IV	1	2	R(P)	(2X15)	30.00		1989 (15 MW) 1988 (15 MW)
162	Mettur Dam	1	4	MP	(4X12.5)	50.00	541.00	1937 (25 MW) 1938 (12.5 MW) 1946 (12.5 MW)
163	Mettur Tunnel	1	4	MP	(4X50)	200.00		1965 (50 MW) 1966 (150 MW)
164	Moyar	1	3	S	(3X12)	36.00	115.00	1952 (24 MW) 1953 (12 MW)
165	Papanasam	1	4	MP	(4X8)	32.00	105.00	1944 (16 MW) 1945 (8 MW) 1951 (8 MW)
166	Parson's Valley	1	1	S	(1X30)	30.00	53.00	2000 (30 MW)
167	Periyar	1	4	MP	(3X42)+(1X35)	161.00	409.00	1958 (35 MW) 1959 (70 MW) 1965 (35 MW)
168	Pykara	1	6	S	(3X7)+(2X13.6)+(1X11)	59.20	274.00	1932 (14 MW) 1933 (7 MW) 1939 (11 MW) 1954 (27.2 MW)
169	Pykara Ultimate	1	3	S	(3X50)	150.00	30.00	2005 (150 MW)
170	Sarakarpathy	1	1	R(P)	(1X30)	30.00	162.00	1966 (30 MW)
171	Sholayar-I	1	2	S	(2X35)	70.00	254.00	1971 (70 MW)
172	Suruliyar	1	1	S	(1X35)	35.00	79.00	1978 (35 MW)
	Total TANGEDCO	**26**	**65**			**1778.20**	**4271.00**	
	Total Tamilnadu	**26**	**65**			**1778.20**	**4271.00**	
	Total Southern Region	**69**	**233**			**9841.55**	**30450.75**	

State-wise/Station-wise Installed Capacity of H.E. Stations in the Country
(Above 25 MW Capacity)

(As on 31.03.2025)

Sl No.	Utilities/Stations	No. of Stations	No. of Units	Type of Project	No. of Units x Capacity (MW)	Capacity (MW)	Design Energy (MU)	Year of Commissioning
	Eastern Region							
	WEST BENGAL							
	DVC							
173	Maithon	1	3	MP	(1X23.2)+(2X20)	63.20	137.00	1957 (20 MW) 1958 (43.2 MW)
	Sub-Total DVC	**1**	**3**			**63.20**	**137.00**	
	NHPC							
174	Teesta Low Dam-III	1	4	R(P)	(4X33)	132.00	594.00	2013 (132 MW)
175	Teesta Low Dam-IV	1	4	R(P)	(4X40)	160.00	719.67	2016 (120 MW)
	Sub Total NHPC	**2**	**8**			**292.00**	**1313.67**	
	Sub-Total Central	**3**	**11**			**355.20**	**1450.67**	
	WBSEDCL							
176	Jaldhaka	1	4	R(P)	(4X9)	36.00	165.00	1967 (18 MW) 1972 (9 MW)
177	Rammam	1	4	R	(4X12.5)	50.00	210.00	1995 (25 MW) 1996 (25 MW)
	Sub-Total WBSEDCL	**2**	**8**			**86.00**	**375.00**	
	Total West Bengal	**5**	**19**			**441.20**	**1825.67**	
	SIKKIM							
	NHPC							
178	Rangit	1	3	R(P)	(3X20)	60.00	338.61	2000 (60 MW)
179	Teesta-V	1	3	R(P)	(3X170)	510.00	2572.70	2008 (510 MW)
	Sub-Total NHPC	**2**	**6**			**570.00**	**2911.31**	
	State Sector							
	Sikkim Urja Ltd.							
180	Teesta-III	1	6	R(P)	(6X200)	1200.00	5214.00	2017 (1200 MW)
	Sub-Total SUL	**1**	**6**			**1200.00**	**5214.00**	
	Private							
	GIPL (Gati Infra Pvt. Ltd.)							
181	Chujachen	1	2	R(P)	(2*55)	110.00	537.81	2013 (110 MW)
	Sneha Kinetic Power Projects Pvt. Ltd.(SKPPPL)							
182	Dikchu	1	2	R(P)	(2*48)	96.00	431.00	2017 (96 MW)
	Shiga Energy Pvt. Ltd.(SEPL)							
183	Tashiding	1	2	R(P)	(2*48.50)	97.00	425.05	2017 (97 MW)
	DANS Energy Pvt. Ltd. (DEPL)							
184	Jorethang Loop	1	2	R(P)	(2*48)	96.00	459.02	2015 (96 MW)
	MBPC							
185	Rongnichu	1	2	R	(2*56.5)	113.00	434.00	June 2021 (113 MW)
	Sub-Total Private	**5**	**10**			**512.00**	**2286.88**	
	Total Sikkim	**8**	**22**			**2282.00**	**10412.19**	
	JAHARKHAND							
186	Panchet	1	2	MP	(2X40)	80.00	237.00	1959 (40 MW) 1991 (40 MW)

State-wise/Station-wise Installed Capacity of H.E. Stations in the Country
(Above 25 MW Capacity)

(As on 31.03.2025)

Sl No.	Utilities/Stations	No. of Stations	No. of Units	Type of Project	No. of Units x Capacity (MW)	Capacity (MW)	Design Energy (MU)	Year of Commissioning
	Sub-Total DVC	**1**	**2**			**80.00**	**237.00**	
	JUUNL							
187	Subernrekha-I	1	1	MP	(1X65)	65.00	149.00	1977 (65 MW)
188	Subernrekha-II	1	1	R(P)	(1X65)	65.00		1980 (65 MW)
	Total JUUNL	**2**	**2**			**130.00**	**149.00**	
	Total Jharkhand	**3**	**4**			**210.00**	**386.00**	
	ODISHA							
	OHPC							
189	Balimela	1	8	MP	(6X60)+(2X75)	510.00	1183.00	1973 (60 MW) 1974 (120 MW) 1975 (60 MW) 1976 (60 MW) 1977 (60 MW) 2008 (150 MW)
190	Hirakud (Burla)	1	7	MP	(2X43.65)+ (1X37.5)+(2X49.5)+(2 X32)	287.80	684.00	1956 (32 MW) 1957 (81.5 MW) 1958 (49.5 MW) 1962 (37.5 MW) 1963 (37.5 MW) 1990 (37.5 MW)
191	Hirakud (Chiplima)	1	3	R(P)	(3X24)	72.00	490.00	1962 (48 MW) 1964 (24 MW)
192	Rengali	1	5	MP	(5X50)	250.00	525.00	1985 (50 MW) 1986 (50 MW) 1989 (50 MW) 1990 (50 MW) 1992 (50 MW)
193	Upper Indravati	1	4	MP	(4X150)	600.00	1962.00	1999 (300 MW) 2000 (150 MW) 2001 (150 MW)
194	Upper Kolab	1	4	MP	(4X80)	320.00	832.00	1988 (160 MW) 1990 (80 MW) 1993 (80 MW)
	Total OHPC	**6**	**31**			**2039.80**	**5676.00**	
	APGENCO							
195	Machkund	1	6	S	(3X17)+(3X21.25)	114.75	670.00	1955 (34 MW) 1956 (17 MW) 1959 (63.75 MW)
	Sub-Total APGENCO	**1**	**6**			**114.75**	**670**	
	Total Odisha	**7**	**37**			**2154.55**	**6346**	
	Total Eastern Region	**23**	**82**			**5087.75**	**18969.86**	
	North Eastern Region							
	ARUNACHAL PRADESH							
	NEEPCO							
196	Ranganadi	1	3	R(P)	(3X135)	405.00	1509.66	2002 (405 MW)
197	Pare	1	2	R (P)	(2X55)	110.00	506.42	2018 (110 MW)
198	Kameng	1	4	R (P)	(4X150)	600.00	3353.00	June 2020 (150 MW) July 2020 (150 MW) Jan 2021 (150 MW) Feb 2021 (150 MW)
	Sub-Total NEEPCO Arunachal Pradesh	**3**	**9**			**1115.00**	**5369.08**	

State-wise/Station-wise Installed Capacity of H.E. Stations in the Country
(Above 25 MW Capacity)

(As on 31.03.2025)

Sl No.	Utilities/Stations	No. of Stations	No. of Units	Type of Project	No. of Units x Capacity (MW)	Capacity (MW)	Design Energy (MU)	Year of Commissioning
	Total Arunachal Pradesh	**3**	**9**			**1115.00**	**5369.08**	
	ASSAM							
	NEEPCO							
199	Kopoli	1	4	S	(4X50)	200.00	1186.14	1988 (100 MW) 1996 (50 MW) 1997 (50 MW)
200	Khandong	1	2	S	(2X25)	50.00	363.95	1984 (50 MW)
	Sub-Total NEEPCO Assam	**2**	**6**			**250.00**	**1550.09**	
	APGCL							
201	Karbi Langpi	1	2	R(P)	(2X50)	100.00	390.00	2007 (100 MW)
	Sub-Total APGCL	**1**	**2**			**100.00**	**390.00**	
	Total Assam	**3**	**8**			**350.00**	**1940.09**	
	MIZORAM							
	NEEPCO							
202	Tuirial	1	2	S	(2X30)	60.00	250.63	2017 (60 MW)
	Total NEEPCO Mizoram	**1**	**2**			**60.00**	**250.63**	
	Total Mizoram	**1**	**2**			**60.00**	**250.63**	
	NAGALAND							
	NEEPCO							
203	Doyang	1	3	S	(3X25)	75.00	227.24	2000 (75 MW)
	Total-NEEPCO Nagaland	**1**	**3**			**75.00**	**227.24**	
	Total Nagaland	**1**	**3**			**75.000**	**227.240**	
	MANIPUR							
	NHPC							
204	Loktak	1	3	MP	(3X35)	105.00	448.00	1983 (105 MW)
	Sub-Total NHPC	**1**	**3**			**105.00**	**448.00**	
	Total Manipur	**1**	**3**			**105.000**	**448.000**	
	MEGHALAYA							
	MePGCL							
205	Kyrdemkulai	1	2	R(P)	(2X30)	60.00	118.00	1979 (60 MW)
206	Umiam St. I	1	4	S	(4X9)	36.00	128.00	1965 (36 MW)
207	New Umtru	1	2	R(P)	(2X20)	40.00	235.00	2017 (20 MW)
208	Umiam St. IV	1	2	R(P)	(2X30)	60.00	324.00	1992 (60 MW)
209	Myntdu St-I	1	3	R(P)	(3X42)	126.00	372.69	2011 (84 MW) 2013 (42 MW)
	Total MePGCL	**5**	**13**			**322.00**	**1177.69**	
	Total Mehghalaya	**5**	**13**			**322.00**	**1177.69**	
	Total NE Region	**14**	**38**			**2027.00**	**9412.73**	
	Total	**209**	**707**			**42982.57**	**151524.73**	
	Pumped Storage Projects							
	Western Region							
	GUJARAT							
	State Sector							
	GSECL							

State-wise/Station-wise Installed Capacity of H.E. Stations in the Country
(Above 25 MW Capacity)

(As on 31.03.2025)

Sl No.	Utilities/Stations	No. of Stations	No. of Units	Type of Project	No. of Units x Capacity (MW)	Capacity (MW)	Design Energy (MU)	Year of Commissioning
1	Kadana	1	4	PSS	(4X60)	240.00	518.00	1990 (120 MW) 1998 (120 MW)
	SSNNL							
2	Sardar Sarovar RBPH	1	6	PSS	(6X200)	1200.00	3635.00	2005 (800 MW) 2006 (400 MW)
	Total Gujarat	**2**	**10**			**1440.00**	**4153.00**	
	MAHARASHTRA							
	State Sector							
	MAHAGENCO							
3	Ghatgarh	1	2	PSS	(2X125)	250.00	410.00	2008 (250 MW)
	Private Sector							
	Tata Power Company							
4	Bhira	1	1	PSS	(1X150)	150.00		1927 (125 MW) 1949 (25 MW)
	Sub-Total Maharashtra	**2**	**3**			**400.00**	**410.00**	
	Total Western Region	**4**	**13**			**1840.00**	**4563.00**	
	Southern Region							
	TELANGANA							
	State Sector							
	TSGENCO							
5	N J Sagar	1	7	PSS	(7X100.8)	705.60	2237.00	08.04.1980 (100.8 MW) 11.01.1981 (100.8 MW) 22.06.1982 (100.8 MW) 31.03.1983 (100.8 MW) 26.10.1984 (100.8 MW) 31.03.1985 (100.8 MW) 31.03.1985 (100.8 MW)
6	Srisailam LBPH	1	6	PSS	(6X150)	900.00	1400.00	26.04.2001 (150 MW) 12.11.2001 (150 MW 19.04.2002 (150 MW) 29.11.2002 (150 MW) 28.03.2003 (150 MW) 04.09.2003 (150 MW)
	Sub-Total TELANGANA	**2**	**13**			**1605.60**	**3637.00**	
	TAMIL NADU							
	State Sector							
	TANGEDCO							
7	Kadamparai	1	4	PSS	(4X100)	400.00	77.00	1987 (100 MW) 1988 (200 MW) 1989 (100 MW)
	Sub-Total TAMIL NADU	**1**	**4**			**400.00**	**77.00**	
	Total Southern Region	**3**	**17**			**2005.60**	**3714.00**	
	Eastern Region							
	WEST BENGAL							
	State Sector							
	WBSEDCL							
8	Purulia	1	4	PSS	(4X225)	900.00	1235.00	1995 (25 MW) 1996 (25 MW)
	Sub-Total	**1**	**4**			**900.00**	**1235.00**	

State-wise/Station-wise Installed Capacity of H.E. Stations in the Country
(Above 25 MW Capacity)

(As on 31.03.2025)

Sl No.	Utilities/Stations	No. of Stations	No. of Units	Type of Project	No. of Units x Capacity (MW)	Capacity (MW)	Design Energy (MU)	Year of Commissioning
	Total- PSP	**8**	**34**			**4745.60**	**9512.00**	
	Total (Conventional+PSP)	**216**	**741**			**47728.17**	**161036.73**	

NOTE: a. R-Run of river, R (P)-Run of river with Pondage, MP-Multipurpose and S-Storage

b. The Total No. of H.E. Stations are 212 as following One Hydro Station has conventional as well as PSP capacity.

Sl. No.	Station	State/Region		Installed Capacity (MW)	
				Conventional	PSP
1	N. J. Sagar	Telangana/ Southern		1X110 =110 (07.03.1978)	7X100.8=705.60

Capacity-wise Grouping of Hydro-electric Stations
(Above 25 MW Capacity)

(As on 31.03.2025)

STATION CAPACITY	NUMBER OF STATIONS		NUMBER OF UNITS		TOTAL CAPACITY	
RANGE (MW)	**No**	**%**	**No**	**%**	**MW**	**%**
> 25 - 100	110.00	50.7	287.00	38.73	6413.80	13.44
>100 - 500	78.00	35.94	295.00	39.81	17883.75	37.47
>500 - 1000	24.00	11.06	127.00	17.14	17432.60	36.52
>1000	5.00	2.30	32.00	4.32	5998.00	12.57
TOTAL	***216**	**100.00**	**741**	**100.00**	**47728.15**	**100.00**

Hydro Generating Units added during 2024-25

(As on 31.03.2025)

Sl. No	Name of the Station	Utility	State	Unit No.	Capacity (MW)	Date of Commissioning
Central Sector						
1	Parabati-II	NHPC	Himachal Pradesh	1	200	28.03.25
				2	200	24.03.25
				3	200	26.03.25
State Sector						
2	Pallivasal Extention	KSEB	Kerala	1	30	24.12.2024
				2	30	24.12.2024
3	Thottiyar	KSEB	Kerala	1	10	04.12.2024
				2	30	04.12.2024
Private Sector						
4	UHL HEP	Beas Valley Power. Corp. Ltd. (BVPC)	Himachal Pradesh	1	33.33	28.02.2025
				2	33.33	05.03.2025
				3	33.33	03.03.2025
ALL INDIA TOTAL					**800**	

CHAPTER-2

GENERATION PERFORMANCE

CHAPTER-2

GENERATION PERFORMANCE

2.1 Generation from hydro-electric power stations (above 25 MW capacity) in the country during 2024-25 was 148.63 BU against the target of 147.71 BU which was 0.63% more than the target. The generation during 2024-25 was 10.88% more than the generation in 2023-24 i.e. 134.05 BU.

2.2 The month-wise and cumulative generation from hydro stations in the country viz-a-viz targets have been shown at **Exhibit-2.1** and are given in **Table 2.1** below.

TABLE 2.1

MONTH-WISE & CUMULATIVE GENERATION VIS-À-VIS TARGET IN MU PERIOD: 2024-25

Month	APR	MAY	JUN	JULY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
Target	9125	11618	13560	18512	20684	18368	12894	9020	8128	8204	8122	9474
Generation	8126	12630	14213	17563	21566	20574	14456	8631	7753	7388	6971	8763
Cumulative Target	9125	20743	34303	52815	73499	91867	104761	113781	121909	130113	138235	147709
Cumulative Generation	8126	20756	34969	52531	74097	94672	109127	117758	125512	132900	139871	148634

2.3 Utility-wise/ Sector-wise Performance of H.E. Stations

The utility-wise / sector-wise target of station viz-a-viz actual generation and surplus / shortfall in respect of Hydro-electric stations during 2024-25 & 2023-24 are given below in **Table 2.2.**

TABLE 2.2

UTILITY-WISE PERFORMANCE OF HYDRO ELECTRIC STATIONS (2024-25 VIS-A-VIS 2023-24)

Utilities	**Installed Capacity (MW) (As on 31.03.2025)**	**Generation**					
		Target (MU)		**Actual (MU)**		**Surplus (+)/ Shortfall (-) in %**	
		2024-25	**2023-24**	**2024-25**	**2023-24**	**2024-25**	**2023-24**
CENTRAL SECTOR							
BBMB	2956.3	9650	9700	10748.49	11583.17	11.38	19.41
NHPC LTD	6051.2	25401	25628	19730.33	21585.84	-22.32	-15.77
SJVN LTD	1972.02	9145	9080	9810.33	8088.21	7.28	-10.92
NTPC LTD	800	3100	3100	3353.15	2952.05	8.17	-4.77
THDC LTD	1400	5269	4160	4618.58	4441.69	-12.34	6.77

NHDC	1520	3265	3265	5463.61	4470.5	67.34	36.92
DVC	143.2	286	286	273.39	176.28	-4.41	-38.36
NEEPCO LTD	1500	5247	10366	5248.73	4848.09	0.03	-53.23
TOTAL CENTRAL	**16342.72**	**61363**	**65585**	**59246.61**	**58145.83**	**-3.45**	**-11.34**
PRIVATE SECTOR							
MPCL	86	333	332	243.85	249.06	-26.77	-24.98
EPPL	100	340	348	184.00	140.74	-45.88	-59.56
ADHPL	192	660	653	656.72	587.67	-0.50	-10.00
GBHPPL	70	274	293	282.62	256.33	3.15	-12.52
HBPCL	300	1213	1213	1365.61	1162.78	12.58	-4.14
JSW ENERGY	1045	4131	4132	4537.06	3786.39	9.83	-8.36
IAEPL	36	158.00	158	158.42	154.99	0.27	-1.91
AHPC LTD	330	1310	1310	1452.16	1306.39	10.85	-0.28
JPVL	400	1750	1750	1828.43	1627.52	4.48	-7.00
DLHP	34	36	36	32.35	23.48	-10.14	-34.78
GIPL	110	537	537	395.86	473.07	-26.28	-11.91
TPCL	447	1480.00	1470	1561.12	1557.6	5.48	5.96
DEPL	96	425	412	410.85	356.93	-3.33	-13.37
SEPL	97	435	436	454.71	433.19	4.53	-0.64
SNEHA KINETIC	96	495	463	35.26	394.08	-92.88	-14.89
NTPGPL	0	300	50	0.00	0	-100.00	0.00
HSPPL	100	402	402	388.26	231.57	-3.42	-42.40
L&T	99	410	439	442	393.66	7.76	-10.33
GMR	180	769	770	732	708.17	-4.84	-8.03
MBPC	113	465	442	395	396.83	-14.98	-10.22
GREENKO	0	880	0	0	0	0	0
TOTAL PRIVATE	**3931**	**16803**	**15646**	**15556**	**14240**	**-2.30**	**-8.98**
STATE SECTOR							
JKSPDCL	1110	5073	5551	4841.82	4781.78	-4.56	-13.86
HPPCL	406	890	874	918.10	846.26	3.16	-3.17
HPSEBL	372	1653	1653	1369.40	1278.95	-17.16	-22.63
BVPC	100	40.00	0	20.63	0	-100.00	0.00
RRVUNL	411	662	672	905.80	1013.97	36.83	50.89
PSPCL	1051	3640	3665	3461.67	3956.85	-4.90	7.96
UPJVNL	501.6	1215	1324	1273.74	850.64	4.83	-35.75
UJVNL	1372.15	5069	5135	4952.24	4722.42	-2.30	-8.03
SSNNL	1450	3955	3100	4862.09	3699.72	22.94	19.35

GSECL	540	1051	1051	1166.43	856.61	10.98	-18.50
MAHAGENCO	2406	4051	3888	3599.22	3316.2	-11.15	-14.71
MPPGCL	875	2461	2407	2585.67	2341.49	5.07	-2.72
CSPGCL	120	274	274	419.42	321.76	53.07	17.43
APGENCO	1796.75	3557	3605	3984.17	2334.98	12.01	-35.23
TSGENCO	2405.6	3686	3969	5270.78	1243.29	42.99	-68.67
KPCL	3617.2	11537	12242	13855.99	8874.4	20.10	-27.51
KSEBL	1964.15	7519	7668	6733.99	5155.72	-10.44	-32.76
TANGEDCO	2178.2	4329	4220	4602.72	3563.28	6.32	-15.56
JUUNL	130	110	110	151.59	96.84	37.81	-11.96
OHPC	2039.8	5684	5363	5804.28	5299.18	2.12	-1.19
TUL	1200	0	5652	0.00	4292.76	0	-24.05
WBSEDCL	986	1600	1560	1735.34	1683.07	8.46	7.89
APGCL	100	380	380	410.50	328.89	8.03	-13.45
MePGCL	322	1107	1106	905.58	808.58	-18.20	-26.89
TOTAL STATE	**27454.45**	**69543.00**	**75469**	**73831.17**	**61667.64**	**6.17**	**-18.29**
TOTAL ALL INDIA	**47728.17**	**147709.00**	**156700.0**	**148633.98**	**134053.92**	**1.23**	**-14.45**

During the year 2024-25, overall hydro generation was more than the target in respect of BBMB, SJVN LTD, NTPC LTD, NHDC & NEEPCO LTD in Central Sector and GBHPPL, HBPCL, JSW ENERGY, IAEPL, AHPC LTD, JPVL, TPC, SEPL and L&T in Private Sector. As regards, generation by State Electricity Boards/Corporations/Departments, hydro generation was more than the target in respect of HPPCL, RRVUNL, UPJVNL, SSNNL, GSECL, MPPGCL, CSPGCL, APGENCO, TSGENCO, KPCL, TANGEDCO, JUUNL, OHPC, WBSEDCL & APGCL.

2.4 Region-wise Performance of H.E. Stations

Region-wise generation performance of hydroelectric stations during 2024-25 is indicated in **Table 2.3.**

TABLE 2.3

GENERATION PERFORMANCE – REGION-WISE
(2024-25)

S. No.	Region	Installed Capacity as on 31.03.2025 (MW)	Generation During 2024-25		
			Target (MU)	Actual (MU)	Shortfall (-)/ Surplus (+) Over Target (%)
1	Northern	20774.27	80886	76489.47	-5.43
2	Western	7392.00	16573	19689.91	18.81
3	Southern	11847.15	30878	33966.57	10.00
4	Eastern	5987.75	12220	11216.85	-8.21
5	North-Eastern	2027	7152	7271.18	1.67
	Total (All India)	**47728.17**	**147709.00**	**148633.98**	**0.63**

- Hydel generation during 2024-25 has exceeded the target in Western, Southern & North-Eastern Regions whereas it was lower than the target in Northern and Eastern Region of the country primarily on account of lower inflows/rainfall in project catchment area**.**
- Hydel generation during 2024-25 was 148633.98 MU against the target of 147709.00 MU viz. higher in generation by 924.98 MU (0.63%). However, actual Hydel generation during 2024-25 is more than previous year generation of 134053.92 MU by 10.88%.

Region-wise generation targets viz-a-viz achievements are indicated at **Exhibit-2.2**.

2.5 Sector-wise generation performance during the year 2024-25 viz-a-viz targets is given in **Table 2.4**.

Generation from H.E. Stations under State Sector has been more than the target. However, Generation from H.E. Stations under Central Sector & Private Sector has been less than the target

TABLE 2.4

SECTOR-WISE GENERATION PERFORMANCE
PERIOD: 2024-25

Sl. No.	Sector	Installed Capacity as on 31.03.2025 (MW)	Generation		
			Target (MU)	Actual (MU)	Shortfall (-) Surplus (+) Over Target (%)
1	Central	16372.72	61363.00	59246.61	-21.16
2	State	27454.45	69543.00	73831.17	42.88
3	Private	3931	16803.00	15556.2	-12.47
	Total	**47728.17**	**147709.00**	**148633.98**	**0.63**

2.6 Details of actual generation during 2024-25 for all the hydro stations (above 25 MW capacity) in the country are given in **Annex 2.1**. It is observed that 116 Nos. of stations have exceeded the target level of generation while the generation has been less than targets in case of 110 Nos. stations. List of stations where generation exceeded the target during 2024-25 is given in **Table 2.5.**

TABLE 2.5

H.E. STATIONS ACHIEVING HIGHER GENERATION VIS-A-VIS TARGET
PERIOD: 2024-25

S. No.	Actual Generation as % of Target	Hydro Electric Stations		
		No. of Stations	% of total No. of Stations	Name of the Station
1	150 & above	8.0	3.69	Indira Sagar, Omkareshwar, N. J. Sagar RBC, Srisailam LB, Kopili, Loktak, Hasdeo Bango & Jawahar Sagar
2	140 - 150	3.0	1.38	Naitwar Mori, Supa DPH, Balimela
3	130 - 140	18.0	8.29	Pong, Mahi Bajaj I, Mahi Baja II, Ram Ganga, Pench, Ghatprabha, Jog, Kadra, Kalinadi, Kodasali, Parson's Valley, Periyar, N.J.Sagar PSS, Pulichinthala, Subernarekha I, Subernarekha II, Tuirial

4	120 - 130	13.0	5.99	Kashang I, R.P. Sagar, Sardar Sarovar RBPH, Bhivpuri, Upper Sileru I & II, Almatti Dam, Gerusoppa, Munirabad, T.B.Dam, Hampi, Aliyar, Papanasam, Jaldhaka I,
5	110 - 120	25.0	11.52	Bhakra Left, Bhakra Right, Baspa-II, Obra, Tehri, Srinagar, Kadana PSS, Sardar Sarovar CHPH, Bansagar Tons-II, Bansagar Tons-III, Bargi, Rajghat, Koyna DPH, Koyna St. I&II, N.J.Sagar TPD, Srisailam RB, Lower Sileru, Sharavathy, Kadamparai PSS, Pykara Ultimate, Lower Jurala, Rengali, Upper Kolab, Rangit, Purulia PSS
6	100 - 110	61.0	28.11	Dehar, Naptha Jhakri, Rampur, Kol Dam, Swara Kuddu, Bassi, Sanjay, Shanan, Karcham Wangtoo, Budhil, Chanju I, Dulhasti, Baglihar, Baglihar II, Chutak, Nimoo Bazgo, Ganguwal, Kotla, A.P. Sahib I, A.P. Sahib II, Mukerian I, Mukerian II, Mukerian III, Mukerian– IV, Matatilla, Rihand, Koteshwar, Chilla, Kulhal (Y.St.IV), Maneri Bhali-I, Vishnu Prayag, Singoli Bhatwari, Ukai, Gandhi Sagar, Tillari, Bhira, Bhira PSS, Khopoli, Bhadra, Varahi, Idukki, Kuttiadi, Kuttiyadi Extn. Kuttiady Addl. Extn, Sengulam, Bhawani K Barrage-III, Kundah-I, Kundah-II, Kundah-III, Kundah-IV, Kundah-V, Pochampad, Priyadarshni Jurala, Tashiding, Maithon, Kameng, Karbi Langpi, Doyang, New Umtru,

H.E. Stations where generation was lower than the target have been listed in **Table 2.6** below:

TABLE 2.6

H.E. STATIONS HAVING SHORTFALL IN GENERATION VIS-A-VIS TARGETS
PERIOD: 2024-25

S. No.	Actual Generation as % of Target	Hydro Electric Stations		
		No. of Stations	% of total No. of Stations	Name of the Station
1	90 - 100	26	11.98	Chamera-I, Chamera-II, Chamera-III, Allain Duhangan, Sorang, Bajoli Holi, Salal-I, Khara, Dhauliganga, Tanakpur, Maneri Bhali-II, Madhikheda, Koyna St. III, Idamalayar, Sabarigiri, Lower Mettur I, Lower Mettur II, Lower Mettur III & Lower Mettur IV, Sholayar I, Hirakud I, Hirakud II, Jorethang Loop, Rammam II, Umium St.I,
2	80-90	23	10.60	Baira Siul, Sainj, Giri Bata, Kishenganga, Lower Jhelum, Chibro (Y.St.II), Dhalipur (Y.St.I), Khatima, Khodri (Y.St.II), Vyasi, Bansagar Tons-I, Bhira Tail Race, Koyna IV, Bhandardhara – II, Lingnamakki, Lower Periyar, Panniar, Sholayar, Sarkarpathy, Panchet, Rongnichu, Teesta Low Dam-IV, Ranganadi
3	70-80	14	6.45	Malana, Uri –II, Ranjit Sagar, Dhakrani (Y.St.I), Kakkad, Pallivasal Ext, Mettur Dam, Mettur Tunnel, Upper Indravati, Machkund, Chuzachen HEP, Pare, Myntdu, Umium St. IV
4	60-70	7	3.22	Sewa-II, Uri, Vaitarna, Shivasamudram, Neriamangalam, Pykara, Kyrdemkulai
5	50-60	3	1.38	Malana-II, Bhawani K Barrage-II, Uhl-III
6	40-50	2	0.92	Larji, Poringalkuthu
7	30-40	1	0.46	Parbati III
8	10-30	5	2.30	Thottiyar, Teesta Low Dam-III, Upper Sindh II, Pallivasal, Ghatgarh PSS
9	0-10	8	3.69	Parbati II, Uhl-III, Tehri PSP, N.J.Sagar LBC, Dikchu, Teesta-V, Teesta-III, Khandong

The Utilities showing excess/shortfall in generation over the target are indicated in **Exhibit- 2.3**.

2.7 Hydro Generation is a function of availability of Water and that of Generating units. Rainfall is the primary source of water, which is highly variable in time and space. However, there could be no direct comparison between the rainfall and the energy generation during these years of data due to different installed capacities. While the rainfall has definite impact on the level of generation, it could also be impacted by the duration of forced and planned outages especially in the case of ROR projects. Region-wise Hydel generation during last five years is given below in **Table 2.7**

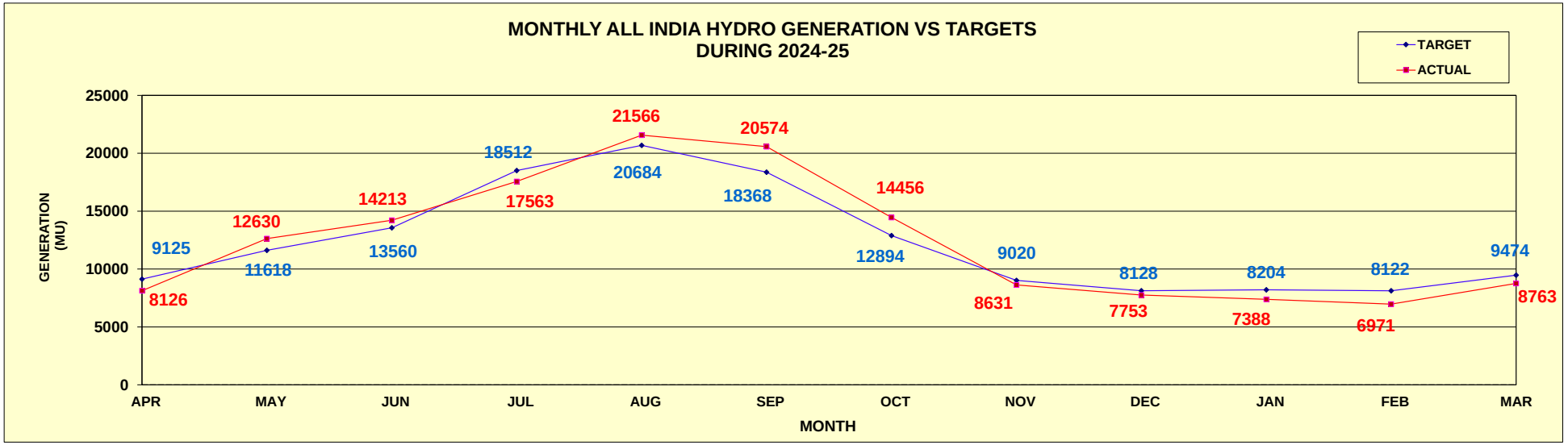
TABLE-2.7

REGION-WISE HYDEL GENERATION AND RAINFALL DURING 2019-20 TO 2024-25

Region	**Installed Capacity as on 31.03.2025 (MW)**	**Generation (BU)**					
		2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**
Northern	20774.27	80.56	75.23	73.86	77.62	73.09	76.49
Western	7392.00	17.81	16.67	13.71	19.57	16.59	19.69
Southern	11847.15	31.75	31.35	37.20	36.87	20.31	33.97
Eastern	5987.75	20.82	21.17	20.46	20.89	17.79	11.22
North Eastern	2027	4.82	5.86	6.37	7.14	6.28	7.27
Total	**47728.17**	**155.76**	**150.29**	**151.62**	**162.09**	**134.05**	**148.63**
Rainfall		**2019-20 (mm)**	**2020-21 (mm)**	**2021-22 (mm)**	**2022-23 (mm)**	**2023-24 (mm)**	**2024-25 (mm)**
All-India		**968.3**				**820.0**	**934.8**

It can be observed from the above table that maximum hydro generation of 162.09 BU was achieved during the year 2022-23 as compared previous four years mainly due to better rainfall in the catchment areas of hydro power stations besides increase in installed capacity.

EXHIBIT- 2.1


MONTHLY ALL INDIA HYDRO GENERATION VS TARGETS
DURING 2024-25
TARGET
ACTUAL
GENERATION (MU)
25000
20000
15000
10000
5000
0
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
JAN
FEB
MAR
MONTH
9125
11618
13560
18512
20684
18368
12894
9020
8128
8204
8122
9474
8126
12630
14213
17563
21566
20574
14456
8631
7753
7388
6971
8763

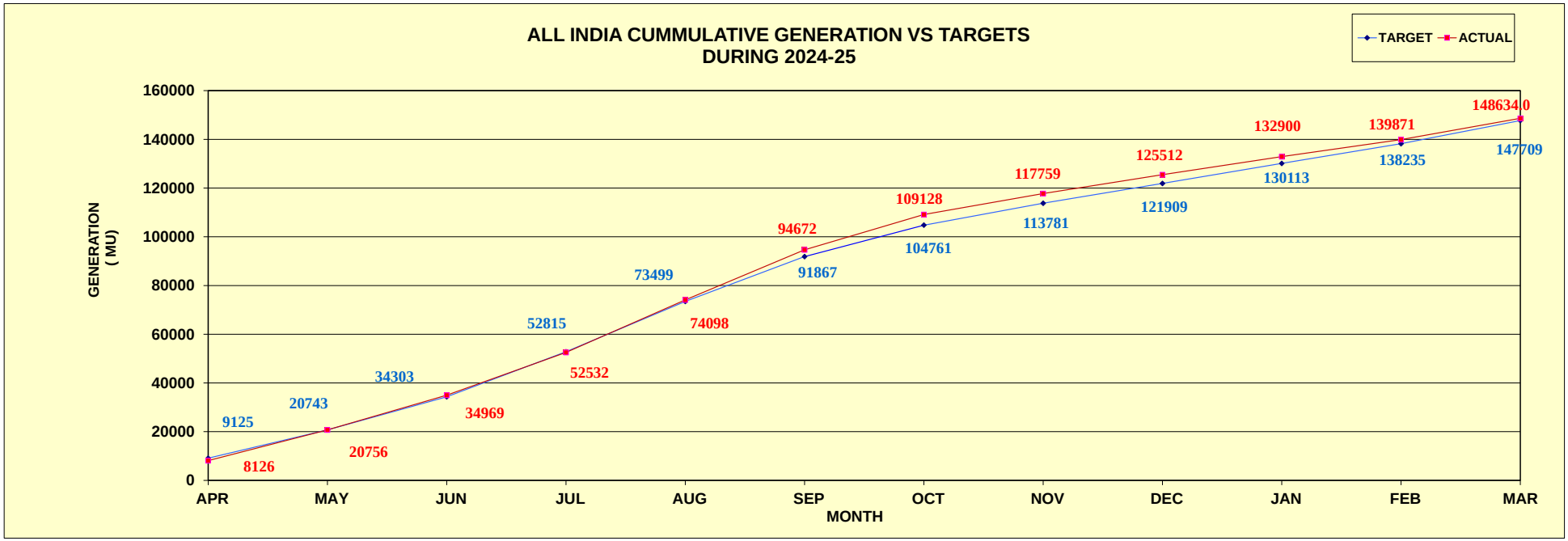

ALL INDIA CUMMULATIVE GENERATION VS TARGETS
DURING 2024-25
TARGET
ACTUAL
GENERATION (MU)
160000
140000
120000
100000
80000
60000
40000
20000
0
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
JAN
FEB
MAR
MONTH
9125
20743
34303
52815
73499
91867
104761
113781
121909
130113
138235
147709
8126
20756
34969
52532
74098
94672
109128
117759
125512
132900
139871
148634.0

EXHIBIT-2.2

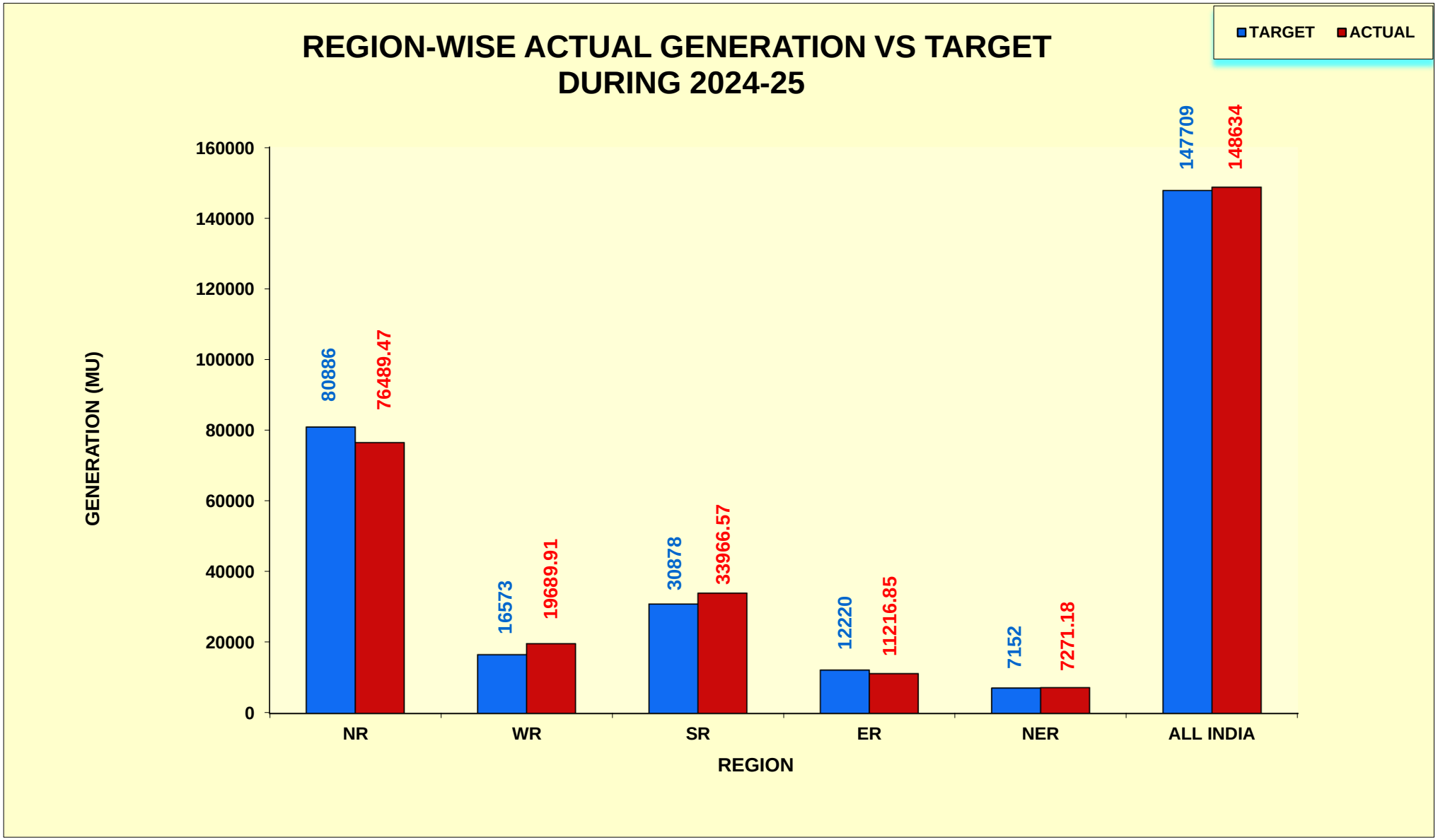
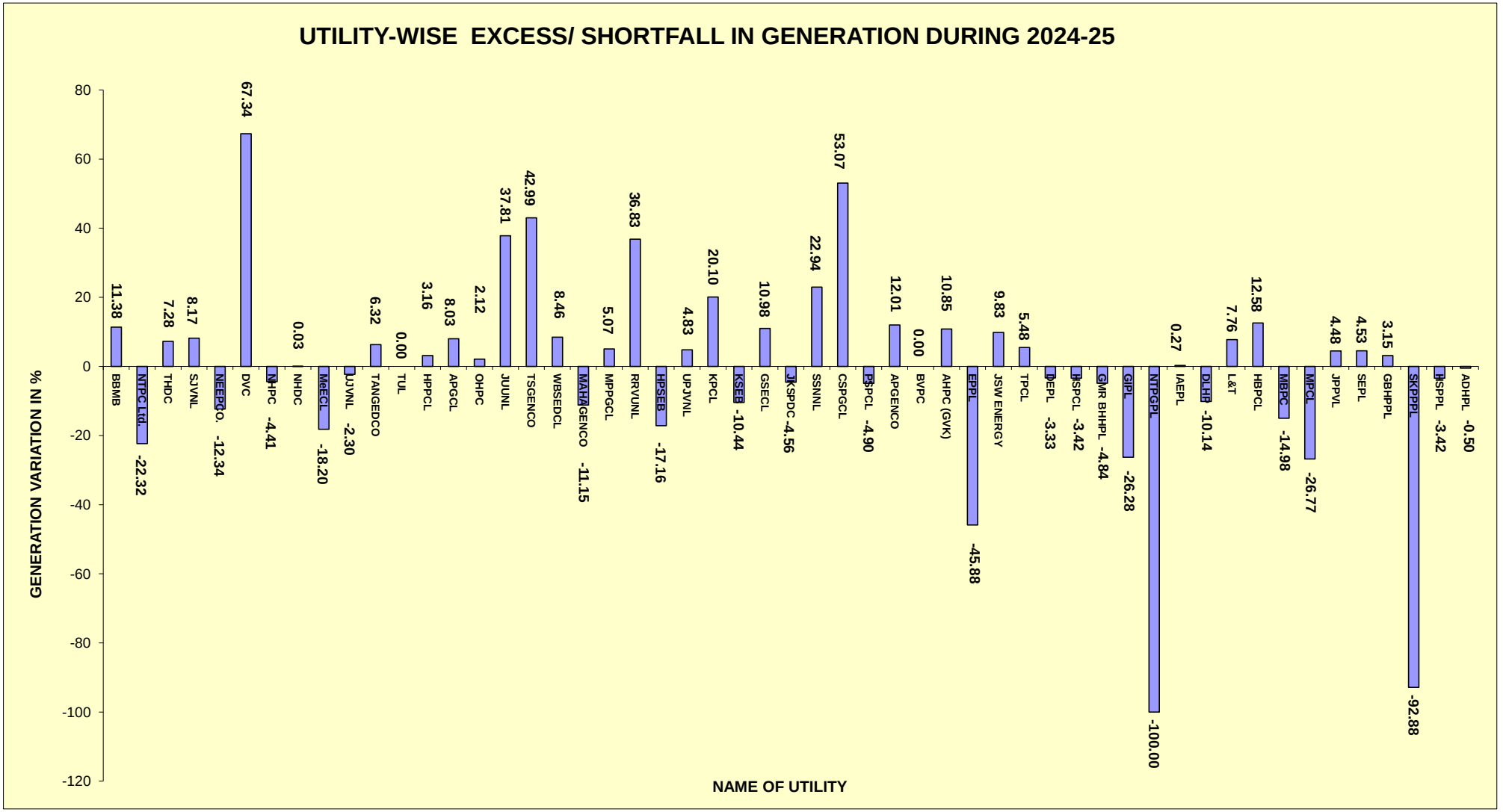

REGION-WISE ACTUAL GENERATION VS TARGET
DURING 2024-25
TARGET
ACTUAL
GENERATION (MU)
160000
140000
120000
100000
80000
60000
40000
20000
0
80886
76489.47
16573
19689.91
30878
33966.57
12220
11216.85
7152
7271.18
147709
148634
NR
WR
SR
ER
NER
ALL INDIA
REGION

EXHIBIT 2.3


UTILITY-WISE EXCESS/ SHORTFALL IN GENERATION DURING 2024-25
% GENERATION VARIATION IN NON
NAME OF UTILITY
80
60
40
20
0
-20
-40
-60
-80
-100
-120
BBMB 11.38
NTPC Ltd. -22.32
THDC 7.28
SJVNL 8.17
NEEPCO. -12.34
DVC 67.34
NHPC -4.41
NHDC 0.03
MeECL -18.20
JJVNL -2.30
TANGEDCO 6.32
TUL 0.00
HPPCL 3.16
APGCL 8.03
OHPC 2.12
JUUNL 37.81
TSGENCO 42.99
WBSEDCL 8.46
MAHAGENCO -11.15
MPPGCL 5.07
RRVUNL 36.83
HPSEB -17.16
UPJVNL 4.83
KPCL 20.10
KSEB -10.44
GSECL 10.98
JKSPDC -4.56
SSNNL 22.94
CSPGCL 53.07
PSPCL -4.90
APGENCO 12.01
BVPC 0.00
AHPC (GVK) 10.85
EPPL -45.88
JSW ENERGY 9.83
TPCL 5.48
DEPL -3.33
JSPCL -3.42
GMR BHHPL -4.84
GIPL -26.28
NTPGPL -100.00
IAEPL 0.27
DLHP -10.14
L&T 7.76
HBPCL 12.58
MBPC -14.98
MPCL -26.77
JPPVL 4.48
SEPL 4.53
GBHPPL 3.15
SKPPPL -92.88
HSPPL -3.42
ADHPL -0.50

REGION/SECTOR/STATION-WISE ACTUAL GENERATION VIS-A-VIS TARGET OF H.E.STATIONS (I. C. ABOVE 25 MW) IN THE COUNTRY DURING THE YEAR 2024-25

REGION/ UTILITY/ STATION	INSTALLED CAPACITY AS ON 31.03.2025 (MW)	DESIGN ENERGY (MU)	2024-25		
			TARGET	ACTUAL	% OF ACTUAL OVER TARGET
NORTHERN	20674.27	75721.26	80886.00	76489.47	94.56
WESTERN	7392.00	16636.21	16573.00	19689.91	118.81
SOUTHERN	11847.15	33999.85	30878.00	33966.57	110.00
EASTERN	5987.75	20204.84	12220.00	11216.85	91.79
NORTH EASTERN	2027.00	9412.73	7152.00	7271.18	101.67
ALL INDIA	**47928.17**	**155974.89**	**147709.00**	**148633.98**	**100.63**
IMPORT FROM BHUTAN			**8000.00**	**5476.57**	**68.46**
ALL INDIA (INCLUDING IMPORT FROM BHUTAN)	**47928.17**	**155974.89**	**155709.00**	**154118**	**98.98**
CENTRAL					
BBMB	2956.30	9515.00	9650.00	10748.49	111.38
NHPC LTD	6251.2	24680.3	25401.00	19730.33	77.68
SJVN LTD	1972.02	8490.08	9145.00	9810.33	107.28
NTPC LTD	800.00	3054.79	3100.00	3353.15	108.17
THDC LTD	1400.00	3952.00	5269.00	4618.58	87.66
NHDC	1520.00	3146.57	3265.00	5463.61	167.34
DVC	143.20	374.00	286.00	273.39	95.59
NEEPCO LTD	1500.00	7397.04	5247	5248.73	100.03
TOTAL CENTRAL	**16542.72**	**60609.82**	**61363**	**59246.61**	**96.55**
STATE					
JKSPDCL	1110.00	4833.30	5073	4841.82	95.44
HPPCL	406.00	955.03	890.00	918.10	103.16

REGION/SECTOR/STATION-WISE ACTUAL GENERATION VIS-A-VIS TARGET OF H.E.STATIONS (I. C. ABOVE 25 MW) IN THE COUNTRY DURING THE YEAR 2024-25

REGION/ UTILITY/ STATION	INSTALLED CAPACITY AS ON 31.03.2025 (MW)	DESIGN ENERGY (MU)	2024-25		
			TARGET	ACTUAL	% OF ACTUAL OVER TARGET
HPSEBL	372.00	1691.62	1653	1369.40	82.84
BVPC	100.00	0.00	40.00	20.63	0.00
RRVUNL	411.00	1046.00	662	905.80	136.83
PSPCL	1051.00	4207.00	3640	3461.67	95.10
UPJVNL	501.60	1707.00	1215	1273.74	104.83
UJVNL	1372.15	4848.10	5069	4952.24	97.70
SSNNL	1450.00	3848.00	3955	4862.09	122.94
GSECL	540.00	1598.00	1051	1166.43	110.98
MAHAGENCO	2406.00	3938.00	4051	3599.22	88.85
MPPGCL	875.00	2561.64	2461	2585.67	105.07
CSPGCL	120.00	274.00	274	419.42	153.07
APGENCO	1796.75	5738.00	3557	3984.17	112.01
TSGENCO	2405.60	5045.85	3686	5270.78	142.99
KPCL	3617.20	12981.00	11537	13855.99	120.10
KSEBL	1964.15	6557.00	7519	6733.99	89.56
TANGEDCO	2178.20	4348.00	4329	4602.72	106.32
JUUNL	130.00	149.00	110	151.59	137.81
OHPC	2039.80	5676.00	5684	5804.28	102.12
TUL	1200.00	5214.00	0	0.00	0.00
WBSEDCL	986.00	1610.00	1600	1735.34	108.46
APGCL	100.00	390.00	380	410.50	108.03
MePGCL	322.00	1177.69	1107	905.58	81.80
TOTAL STATE	**27454.45**	**80394.23**	**69543.00**	**73831.17**	**106.17**
PRIVATE					
MPCL	86.00	370.93	333	243.85	73.23
EPPL	100.00	403.00	340	184.00	54.12
ADHPL	192.00	678.18	660.00	656.72	99.50
GBHPPL	70.00	291.73	274	282.62	103.15
HBPCL	300.00	1213.00	1213.00	1365.61	112.58
JSW ENERGY	1045.00	4131.06	4131.00	4537.06	109.83
IAEPL	36.00	157.82	158.00	158.42	100.27
AHPC LTD	330.00	1396.84	1310	1452.16	110.85
JPVL	400.00	1774.42	1750	1828.43	104.48

REGION/SECTOR/STATION-WISE ACTUAL GENERATION VIS-A-VIS TARGET OF H.E.STATIONS (I. C. ABOVE 25 MW) IN THE COUNTRY DURING THE YEAR 2024-25

REGION/ UTILITY/ STATION	INSTALLED CAPACITY AS ON 31.03.2025 (MW)	DESIGN ENERGY (MU)	2024-25		
			TARGET	ACTUAL	% OF ACTUAL OVER TARGET
DLHP	34.00	50.00	36	32.35	89.86
GIPL	110.00	537.81	537	395.86	73.72
TPCL	447.00	1220.00	1480.00	1561.12	105.48
DEPL	96.00	459.00	425	410.85	96.67
SEPL	97.00	425.05	435	454.71	104.53
SNEHA KINETIC	96.00	431.00	495	35.26	7.12
NTPGPL	0.00	0.00	300	0.00	0.00
HSPPL	100.00	524.00	402	388.26	96.58
L&T	99.00	473.00	410	442	107.76
GMR	180.00	0.00	769	732	95.16
MBPC	113.00	434.00	465	395	85.02
TOTAL PRIVATE	**3931.00**	**14970.84**	**15923**	**15556**	**97.70**
TOTAL ALL INDIA	**47928.17**	**155974.89**	**146829**	**148633.98**	**101.23**
NORTHERN REGION					
HIMACHAL PRADESH					
CENTRAL SECTOR					
BBMB					
Bhakra L&R	1415.00	3924.00	4600	5083.59	110.51
Dehar	990.00	3110.00	2800	2956.1	105.58
Pong	396.00	1123.00	1150	1531.71	133.19
Total BBMB-HP	**2801.00**	**8157.00**	**8550.00**	**9571.40**	**111.95**
NHPC					
Baira Siul	180.00	779.28	692	569.1	82.24
Chamera-I	540.00	1664.56	2250	2089.22	92.85
Chamera-II	300.00	1499.89	1433	1343.7	93.77
Chamera-III	231.00	1108.00	1020	1012.46	99.26
Parbati III	520.00	1977.23	1551	572.4	36.91
Parbati II*	800.00		2250	10.27	0.00
Total NHPC -HP	**2571.00**	**7028.96**	**9196.00**	**5597.15**	**60.87**
SJVN					
Naptha Jhakri	1500.00	6612.00	6945	7421.45	106.86

REGION/SECTOR/STATION-WISE ACTUAL GENERATION VIS-A-VIS TARGET OF H.E.STATIONS (I. C. ABOVE 25 MW) IN THE COUNTRY DURING THE YEAR 2024-25

REGION/ UTILITY/ STATION	INSTALLED CAPACITY AS ON 31.03.2025 (MW)	DESIGN ENERGY (MU)	2024-25		
			TARGET	ACTUAL	% OF ACTUAL OVER TARGET
Rampur	412.02	1878.08	1985	2074.04	104.49
Total SJVN	**1972.02**	**8490.08**	**8930.00**	**9495.5**	**106.33**
NTPC					
Kol Dam	800.00	3054.79	3100	3353.15	108.17
Total NTPC	**800.00**	**3054.79**	**3100.00**	**3353.15**	**108.17**
Total Central-HP	**8144.02**	**26730.83**	**29776.00**	**28017.19**	**94.09**
STATE SECTOR					
HPPCL					
Kashang I	65.00	245.80	185	232.43	125.64
Kashang II & III	130.00				
Sainj	100.00	323.23	395	417.5	86.51
Swara Kuddu	111.00	386.00	310	268.17	103.16
Total HPPCL	**406.00**	**955.03**	**890.00**	**918.10**	**103.16**
HPSEB LTD					
Bassi	66.00	346.77	304	322.6	106.12
Giri Bata	60.00	240.00	180	153.96	85.53
Larji	126.00	586.85	619	303.06	48.96
Sanjay	120.00	518.00	550	589.78	107.23
Total HPSEB LTD	**372.00**	**1691.62**	**1653.00**	**1369.40**	**82.84**
Beas Valley Power. Corp. Ltd. (BVPC)					
Uhl-III	100.00		40	20.63	
Total BVPC	**100.00**		40.00	20.63	0
PSPCL					
Shanan	110.00	585.00	480	512.65	106.80
Total PSPCL-HP	**110.00**	**585.00**	**480.00**	**512.65**	**106.80**
Total State Sector-HP	**988.00**	**3231.65**	**3063.00**	**2820.78**	**92.09**
PRIVATE					
Allain Duhangan Power Power Ltd.					
Allain Duhangan	192.00	678.18	660	656.72	99.50
Everest Power Private Ltd.					
Malana-II	100.00	403.00	340	184	54.12
HBPCL					

REGION/SECTOR/STATION-WISE ACTUAL GENERATION VIS-A-VIS TARGET OF H.E.STATIONS (I. C. ABOVE 25 MW) IN THE COUNTRY DURING THE YEAR 2024-25

REGION/ UTILITY/ STATION	INSTALLED CAPACITY AS ON 31.03.2025 (MW)	DESIGN ENERGY (MU)	2024-25		
			TARGET	ACTUAL	% OF ACTUAL OVER TARGET
Baspa-II	300.00	1213.00	1213	1365.61	112.58
JSW					
Karcham Wangtoo	1045.00	4131.06	4131	4537.06	109.83
GBHPPL					
Budhil	70.00	291.73	274	282.62	103.15
IA Energy Pvt. Ltd.					
Chanju I	36.00	157.82	158	158.42	100.27
Malana Power Company Ltd.					
Malana	86.00	370.93	333	243.85	73.23
NSL Tidond Power Generation Pvt. Ltd.					
Tidong*			300	0	
Himachal Sorang Power Limited (HSPL)					
Sorang	100	524	402	388.26	96.58
GMR					
Bajoli Holi	180		769	731.78	95.16
Total Private-HP	**2109.00**	**7769.72**	**8580.00**	**8548.32**	**844.41**
Total H.P.	**11241.02**	**37732.20**	**41419.00**	**39386.29**	**95.09**
JAMMU & KASHMIR					
CENTRAL SECTOR					
NHPC					
Dulhasti	390.00	1907.00	2122	2232.77	105.22
Salal-I	345.00	3082.00	3464	3230.34	93.25
Salal-II	345.00		0	0	
Sewa-II	120.00	533.52	532	370.87	69.71
Uri	480.00	2587.38	2973	1939.77	65.25
Uri -II	240.00	1124.00	1623	1293.31	79.69
Kishenganga	330.00	1705.62	1454	1291.77	88.84
Total NHPC -J&K	**2250.00**	**10939.52**	**12168.00**	**10358.83**	**85.13**
Total Central Sector - J&K	**2250.00**	**10939.52**	**12168.00**	**10358.83**	**85.13**
STATE SECTOR					
JKSPDC					
Baglihar	450.00	2643.00	2583	2707.33	104.81

REGION/SECTOR/STATION-WISE ACTUAL GENERATION VIS-A-VIS TARGET OF H.E.STATIONS (I. C. ABOVE 25 MW) IN THE COUNTRY DURING THE YEAR 2024-25

REGION/ UTILITY/ STATION	INSTALLED CAPACITY AS ON 31.03.2025 (MW)	DESIGN ENERGY (MU)	2024-25		
			TARGET	ACTUAL	% OF ACTUAL OVER TARGET
Baglihar II	450.00	1302.30	1491	1535.52	102.99
Lower Jhelum	105.00	533.00	584	498.31	85.33
Upper Sindh II	105.00	355.00	415	100.66	24.26
Total JKSPDC	**1110.00**	**4833.30**	**5073.00**	**4841.82**	**95.44**
Total State Sector-J&K	**1110.00**	**4833.30**	**5073.00**	**4841.82**	**95.44**
Total Jammu & Kashmir	**3360.00**	**15772.82**	**17241.00**	**15200.65**	**88.17**
LADHAK					
CENTRAL SECTOR					
NHPC					
Chutak	44.00	213.00	165	169.22	**102.56**
Nimoo Bazgo	45.00	239.00	230	243.84	**106.02**
Total Central Sector-Ladhak	**89.00**	**452.00**	**395.00**	**413.06**	**104.57**
Total Ladhak	**89.00**	**452.00**	**395.00**	**413.06**	**104.57**
PUNJAB					
CENTRAL SECTOR					
BBMB					
Ganguwal	77.65	1358.00	550	591.01	107.46
Kotla	77.65		550	586.08	106.56
Total BBMB-Punjab	**155.30**	**1358.00**	**1100.00**	**1177.09**	**107.01**
STATE SECTOR					
PSPCL					
A.P.Sahib I & II	134.00	909.00	470	486.16	103.44
Mukerian I - IV	207.00	1206.00	1110	1203.4	108.41
Ranjit Sagar	600.00	1507.00	1580	1259.46	79.71
Total PSPCL	**941.00**	**3622.00**	**3160.00**	**2949.02**	**93.32**
Total State Sector-Punjab	**941.00**	**3622.00**	**3160.0**	**2949.02**	**93.32**
Total Punjab	**1096.30**	**4980.00**	**4260.00**	**4126.11**	**96.86**
RAJASTHAN					
STATE SECTOR					
RRVUNL					
Jawahar Sagar	99.00	298.00	190	291.14	153.23

REGION/SECTOR/STATION-WISE ACTUAL GENERATION VIS-A-VIS TARGET OF H.E.STATIONS (I. C. ABOVE 25 MW) IN THE COUNTRY DURING THE YEAR 2024-25

REGION/ UTILITY/ STATION	INSTALLED CAPACITY AS ON 31.03.2025 (MW)	DESIGN ENERGY (MU)	2024-25		
			TARGET	ACTUAL	% OF ACTUAL OVER TARGET
Mahi Bajaj I & II	140.00	289.00	160	213.8	133.63
R.P. Sagar	172.00	459.00	312	400.86	128.48
Total RRVUNL	**411.00**	**1046.00**	**662.00**	**905.80**	**136.83**
Total State sector-Rajasthan	**411.00**	**1046.00**	**662.00**	**905.80**	**136.83**
Total Rajasthan	**411.00**	**1046.00**	**662.00**	**905.80**	**136.83**
UTTAR PRADESH					
STATE SECTOR					
UPJVNL					
Khara	72.00	385.00	275	271.85	98.85
Matatilla	30.60	123.00	120	120.1	100.08
Obra	99.00	279.00	220	247.14	112.34
Rihand	300.00	920.00	600	634.65	105.78
Total UPJVNL	**501.60**	**1707.00**	**1215.00**	**1273.74**	**104.83**
Total State Sector-UP	**501.60**	**1707.00**	**1215.00**	**1273.74**	**104.83**
Total Uttar Pradesh	**501.60**	**1707.00**	**1215.00**	**1273.74**	**104.83**
UTTARAKHAND					
CENTRAL SECTOR					
NHPC					
Dhauliganga	280.00	1134.69	1172	1123.16	95.83
Tanakpur	94.20	452.19	499	452.6	90.70
Total NHPC-UK	**374.20**	**1586.88**	**1671.00**	**1576**	94.30
NTPC					
Tapovan Vishnugad			0	0	
Total NTPC-UK			**0.00**	**0**	
THDC LTD					
Tehri	1000.00	2797.00	3000	3373.89	112.46
Tehri PSP			1109	0	
Koteshwar	400.00	1155.00	1160	1244.69	107.30
Total THDC LTD	**1400.00**	**3952.00**	**5269.00**	**4618.58**	**87.66**
SJVN					
Naitwar Mori	60.00		215	314.84	146.44

REGION/SECTOR/STATION-WISE ACTUAL GENERATION VIS-A-VIS TARGET OF H.E.STATIONS (I. C. ABOVE 25 MW) IN THE COUNTRY DURING THE YEAR 2024-25

REGION/ UTILITY/ STATION	INSTALLED CAPACITY AS ON 31.03.2025 (MW)	DESIGN ENERGY (MU)	2024-25		
			TARGET	ACTUAL	% OF ACTUAL OVER TARGET
Total SJVN					
Total Central Sector - UK	**1774.20**	**5538.88**	**7155.00**	**6509.18**	**90.97**
STATE SECTOR					
UJVNL					
Chibro (Y.St.II)	240.00	750.00	857	758.45	88.50
Chilla	144.00	725.00	663	706.46	106.56
Dhakrani (Y.St.I)	33.75	169.00	150	107.4	71.60
Dhalipur (Y.St.I)	51.00	192.00	250	221.5	88.60
Khatima	41.40	208.00	210	185.34	88.26
Khodri (Y.St.II)	120.00	345.00	410	366.26	89.33
Kulhal (Y.St.IV)	30.00	164.00	140	140.98	100.70
Maneri Bhali-I	90.00	395.00	462	500.99	108.44
Maneri Bhali-II	304.00	1566.10	1310	1292.46	98.66
Ram Ganga	198.00	334.00	264	365.21	138.34
Vyasi	120.00		353	307.19	87.02
Total UJVNL	**1372.15**	**4848.10**	**5069.00**	**4952.24**	**97.70**
Total State Sector-Uttarakhand	**1372.15**	**4848.10**	**5069.00**	**4952.24**	**97.70**
PRIVATE SECTOR					
AHPC LTD					
Srinagar	330.00	1396.84	1310	1452.16	110.85
Jaiprakash Power Venture Ltd.					
Vishnu Prayag	400.00	1774.42	1750	1828.43	104.48
L&T					
Singoli Bhatwari	99.00	473	410	441.81	107.76
Total Private Sector - UK	**829.00**	**3644.26**	**3470.00**	**3722.40**	**107.27**
Total Uttarakhand	**3975.35**	**14031.24**	**15694.00**	**15183.82**	**96.75**
Total N. REGION	**20674.27**	**75721.26**	**80886.00**	**76489.47**	**94.56**
WESTERN REGION					
CHHATISGARH					
STATE SECTOR					
CSPGC					
Hasdeo Bango	120.00	274.00	274	419.42	153.07

REGION/SECTOR/STATION-WISE ACTUAL GENERATION VIS-A-VIS TARGET OF H.E.STATIONS (I. C. ABOVE 25 MW) IN THE COUNTRY DURING THE YEAR 2024-25

REGION/ UTILITY/ STATION	INSTALLED CAPACITY AS ON 31.03.2025 (MW)	DESIGN ENERGY (MU)	2024-25		
			TARGET	ACTUAL	% OF ACTUAL OVER TARGET
Total CSPGC	**120.00**	**274.00**	**274.00**	**419.42**	**153.07**
Total State Sector-Chhatisgarh	**120.00**	**274.00**	**274.00**	**419.42**	**153.07**
Total Chhatisgarh	**120.00**	**274.00**	**274.00**	**419.42**	**153.07**
GUJARAT					
STATE SECTOR					
GSECL					
Kadana PSS	240.00	518.00	330.00	390.20	118.24
Ukai	300.00	1080.00	721.00	776.23	107.66
Total GSECL	**540.00**	**1598.00**	**1051.00**	**1166.43**	**110.98**
SSNNL					
Sardar Sarovar CHPH	250.00	213.00	1059.00	1266.30	119.58
Sardar Sarovar RBPH	1200.00	3635.00	2896.00	3595.79	124.16
Total SSNNL	**1450.00**	**3848.00**	**3955.00**	**4862.09**	**122.94**
Total State Sector -Gujarat	**1990.00**	**5446.00**	**5006.00**	**6028.52**	**120.43**
Total Gujarat	**1990.00**	**5446.00**	**5006.00**	**6028.52**	**120.43**
MADHYA PRADESH					
CENTRAL					
NHDC					
Indira Sagar	1000.00	1980.00	2150	3631.35	168.90
Omkareshwar	520.00	1166.57	1115	1832.26	164.33
Total NHDC	**1520.00**	**3146.57**	**3265.00**	**5463.61**	**167.34**
Total Central Sector-MP			**3265.00**	**5463.61**	**167.34**
STATE SECTOR					
MPPGCL					
Bansagar Tons-I	315.00	900.00	1040	924.72	88.92
Bansagar Tons-II	30.00	113.00	90	105.6	117.42
Bansagar Tons-III	60.00	143.00	98	111.96	114.24
Bargi	90.00	508.08	427	509	119.20
Gandhi Sagar	115.00	420.48	270	275.71	102.11
Madhikheda	60.00	74.12	116	105.99	91.37
Rajghat	45.00	87.60	95	110.14	115.94

REGION/SECTOR/STATION-WISE ACTUAL GENERATION VIS-A-VIS TARGET OF H.E.STATIONS (I. C. ABOVE 25 MW) IN THE COUNTRY DURING THE YEAR 2024-25

REGION/ UTILITY/ STATION	INSTALLED CAPACITY AS ON 31.03.2025 (MW)	DESIGN ENERGY (MU)	2024-25		
			TARGET	ACTUAL	% OF ACTUAL OVER TARGET
Total MPPGPCL	**715.00**	**2246.28**	**2136.00**	**2143.12**	**100.33**
Total State-MP	**715.00**	**2246.28**	**2136.00**	**2143.12**	**100.33**
SMHPCL(PVT.)					
Maheshwar*			0	0	
Total M.P.	**2235.00**	**5392.85**	**5401.00**	**7606.73**	**140.84**
MAHARASHTRA					
STATE SECTOR					
MAHAGENCO					
Bhira Tail Race	80.00	75.00	85	69.59	81.87
Ghatghar PSS	250.00	146.00	420	119.36	28.42
Koyna DPH	36.00	410.00	150	176.13	117.42
Koyna St.I&II	600.00	3030.00	800	954.48	119.31
Koyna St.III	320.00		600	574.27	95.71
Koyna IV	1000.00		1742	1493.75	85.75
Tillari	60.00	133.00	110	112.61	102.37
Vaitarna	60.00	144.00	144	99.03	68.77
Total MAHAGENCO	**2406.00**	**3938.00**	**4051.00**	**3599.22**	**88.85**
MPPGPCL					
Pench	160.00	315.36	325	442.55	136.17
Total MPPGPCL-Maha.	**160.00**	**315.36**	**325.00**	**442.55**	**136.17**
Total State Sector-Maha.	**2566.00**	**4253.36**	**4376.00**	**4041.77**	**92.36**
PRIVATE SECTOR					
Dodson-Lindblom Hydro Power Pvt. Ltd. (DLHPPL)					
Bhandardhara - II	34.00	50.00	36	32.35	89.86
Total DLHP	**34.00**	**50.00**	**36.00**	**32.35**	**89.86**
Tata Power Company Ltd.					
Bhira	150.00	775.00	450	451.53	100.34
Bhira PSS	150.00		450	464.13	103.14
Bhivpuri	75.00	220.00	290	355.03	122.42
Khopoli	72.00	225.00	290	290.43	100.15
Total TPCL	**447.00**	**1220.00**	**1480.00**	**1561.12**	**105.48**
Total Private Sector-Maharashtra	**481.00**	**1270.00**	**1516.00**	**1593.47**	**105.11**

REGION/SECTOR/STATION-WISE ACTUAL GENERATION VIS-A-VIS TARGET OF H.E.STATIONS (I. C. ABOVE 25 MW) IN THE COUNTRY DURING THE YEAR 2024-25

REGION/ UTILITY/ STATION	INSTALLED CAPACITY AS ON 31.03.2025 (MW)	DESIGN ENERGY (MU)	2024-25		
			TARGET	ACTUAL	% OF ACTUAL OVER TARGET
Total Maharashtra	**3047.00**	**5523.36**	**5892.00**	**5635.24**	**95.64**
Total Western	**7392.00**	**16636.21**	**16573.00**	**19689.91**	**118.81**
SOUTHERN REGION					
ANDHRA PRADESH					
STATE SECTOR					
APGENCO					
N.J.Sagar TPD	50.00	177.00	78	92.44	118.51
N.J.Sagar RBC	90.00	156.00	128	211.78	165.45
Srisailam RB	770.00	2900.00	1000	1166.57	116.66
Upper sileru I & II	240.00	529.00	477	604.92	126.82
Lower Sileru	460.00	1070.00	1084	1227.37	113.23
Total APGENCO	**1610.00**	**4832.00**	**2767.00**	**3303.08**	**119.37**
Total State Sector-AP	**1610.00**	**4832.00**	**2767.00**	**3303.08**	**119.37**
PRIVATE SECTOR					
Greenko					
Pinnapuram			**880.00**		
Total Pvt Sector- Andhra Pradesh			**880.00**		
Total Andhra Pradesh	**1610.00**	**4832.00**	**3647.00**	**3303.08**	**90.57**
KARNATAKA					
STATE SECTOR					
KPCL					
Almatti Dam	290.00	483.00	483	624.76	129.35
Bhadra	26.00	123.00	55	58.31	106.02
Gerusoppa	240.00	622.00	471	565.98	120.17
Ghatprabha	32.00	131.00	70	97.86	139.80
Jog	139.20	118.00	338	439.85	130.13
Kadra	150.00	570.00	363	490.11	135.02
Kalinadi	900.00	3385.00	2962	3868.2	130.59
Supa DPH	100.00	542.00	438	622.3	142.08
Kodasali	120.00	512.00	364	497.02	136.54
Lingnamakki	55.00	254.00	221	177.3	80.23

REGION/SECTOR/STATION-WISE ACTUAL GENERATION VIS-A-VIS TARGET OF H.E.STATIONS (I. C. ABOVE 25 MW) IN THE COUNTRY DURING THE YEAR 2024-25

REGION/ UTILITY/ STATION	INSTALLED CAPACITY AS ON 31.03.2025 (MW)	DESIGN ENERGY (MU)	2024-25		
			TARGET	ACTUAL	% OF ACTUAL OVER TARGET
Munirabad	28.00	66.00	100	122.99	122.99
Sharavathy	1035.00	4932.00	4387	4982.48	113.57
Shivasamudram	42.00	183.00	225	147.79	65.68
Varahi	460.00	1060.00	1060	1161.04	109.53
Total KPCL	**3617.20**	**12981.00**	**11537.00**	**13855.99**	**120.10**
APGENCO					
T.B.Dam & Hampi	72.00	236.00	160	199.75	124.84
Total APGENCO-Karnataka	**72.00**	**236.00**	**160.00**	**200.01**	**125.01**
Total State Sector-Karnataka	**3689.20**	**13217.00**	**11697.00**	**14056.00**	**120.17**
Total Karnataka	**3689.20**	**13217.00**	**11697.00**	**14056.00**	**120.17**
KERALA					
STATE SECTOR					
KSEB Ltd.					
Idamalayar	75.00	380.00	368	339.5	92.26
Idukki	780.00	2398.00	2398	2413.49	100.65
Kakkad	50.00	262.00	270	205.92	76.27
Kuttiadi & Kuttiady Addl.	225.00	323.00	752	766.53	101.93
Lower Periyar	180.00	493.00	665	584.9	87.95
Neriamangalam	52.65	237.00	363	234.96	64.73
Pallivasal	37.50	284.00	116	15.02	12.95
Pallivasal Ext	60.00		190	139.25	73.29
Panniar	30.00	158.00	200	171.17	85.59
Poringalkuthu	32.00	170.00	326	148.95	45.69
Sabarigiri	300.00	1338.00	1360	1319.91	97.05
Sengulam	48.00	182.00	125	127.03	101.62
Sholayar	54.00	233.00	287	252.28	87.90
Thottiyar	40.00	99.00	99	15.08	15.23
Total KSEB LTD.	**1964.15**	**6557.00**	**7519.00**	**6733.99**	**89.56**
Total State Sector-Kerala	**1964.15**	**6557.00**	**7519.00**	**6733.99**	**89.56**
Total Kerala	**1964.15**	**6557.00**	**7519.00**	**6733.99**	**89.56**
TAMIL NADU					

REGION/SECTOR/STATION-WISE ACTUAL GENERATION VIS-A-VIS TARGET OF H.E.STATIONS (I. C. ABOVE 25 MW) IN THE COUNTRY DURING THE YEAR 2024-25

REGION/ UTILITY/ STATION	INSTALLED CAPACITY AS ON 31.03.2025 (MW)	DESIGN ENERGY (MU)	2024-25		
			TARGET	ACTUAL	% OF ACTUAL OVER TARGET
STATE SECTOR					
TANGEDCO					
Aliyar	60.00	175.00	120	154.94	129.12
Bhawani K Barrage-III	30.00	90.00	51	52.62	103.18
Bhawani K Barrage-II	30.00	100.00	68	37.09	54.54
Bhawani K Barrage-I	30.00	80.00	68	89.95	132.28
Kadamparai PSS	400.00	77.00	378	429.09	113.52
Kodayar I&II	100.00	165.00	75	119.8	159.73
Kundah I-V	555.00	1387.00	1232	1354.75	109.96
Lower Mettur I-IV	120.00	252.00	265	242.73	91.60
Mettur Dam	50.00	541.00	158	126.22	79.89
Mettur Tunnel	200.00		467	354.17	75.84
Moyar	36.00	115.00	85	46.14	54.28
Papanasam	32.00	105.00	100	126.99	126.99
Parson's Valley	30.00	53.00	30	39.5	131.67
Periyar	161.00	409.00	420	560.03	133.34
Pykara	59.20	274.00	35	21.12	60.34
Pykara Ultimate	150.00	30.00	300	345.44	115.15
Sarkarpathy	30.00	162.00	117	105.18	89.90
Sholayar I	70.00	254.00	280	273.51	97.68
Suruliyar	35.00	79.00	80	123.45	154.31
Total TANGEDCO	**2178.20**	**4348.00**	**4329.00**	**4602.72**	**106.32**
Total State Sector-TN	**2178.20**	**4348.00**	**4329.00**	**4602.72**	**106.32**
Total Tamilnadu	**2178.20**	**4348.00**	**4329.00**	**4602.72**	**106.32**
TELANGANA					
STATE SECTOR					
TSGENCO					
Lower Jurala	240.00	534.43	294	333.36	113.39
N.J.Sagar PSS	815.60	2237.00	1400	1923.28	137.38
N.J.Sagar LBC	60.00	104.00	69	122.6	0.00
Pochampad	36.00	147.00	62	66.98	108.03
Priyadarshni Jurala	234.00	404.00	330	344.49	104.39

REGION/SECTOR/STATION-WISE ACTUAL GENERATION VIS-A-VIS TARGET OF H.E.STATIONS (I. C. ABOVE 25 MW) IN THE COUNTRY DURING THE YEAR 2024-25

REGION/ UTILITY/ STATION	INSTALLED CAPACITY AS ON 31.03.2025 (MW)	DESIGN ENERGY (MU)	2024-25		
			TARGET	ACTUAL	% OF ACTUAL OVER TARGET
Pulichinthala	120.00	219.42	200	268.86	134.43
Srisailam LB	900.00	1400.00	1331	2211.21	166.13
Total TSGENCO	**2405.60**	**5045.85**	**3686.00**	**5270.78**	**142.99**
Total State Sector-Telangana	**2405.60**	**5045.85**	**3686.00**	**5270.78**	**142.99**
Total Telangana	**2405.60**	**5045.85**	**3686.00**	**5270.78**	**142.99**
Total Southern	**11847.15**	**33999.85**	**30878.0**	**33967**	**110.00**
EASTERN REGION					
JHARKHAND					
CENTRAL SECTOR					
DVC					
Panchet	80.00	237.00	142	117.53	82.77
Total DVC	**80.00**	**237.00**	**142.00**	**117.53**	82.77
Total Central Sector-Jharkhand	**80.00**	**237.00**	**142.00**	**117.53**	82.77
STATE SECTOR					
JUUNL					
Subernarekha I&II	130.00	149.00	110	151.59	137.81
Total Jharkhand	**130.00**	**149.00**	**110.00**	**151.59**	**137.81**
Total State Sector-Jharkhand	**130.00**	**149.00**	**110.00**	**151.59**	**137.81**
Total Jharkhand	**210.00**	**386.00**	**252.00**	**269.12**	**106.79**
ODISHA					
STATE SECTOR					
OHPC					
Balimela	510.00	1183.00	1186	1667.99	140.64
Hirakud I&II	359.80	1174.00	1031	998.55	96.85
Rengali	250.00	525.00	771	904.5	117.32
Upper Indravati	600.00	1962.00	1970	1424.3	72.30
Upper Kolab	320.00	832.00	726	808.94	111.42
Total OHPC	**2039.80**	**5676.00**	**5684.00**	**5804.28**	**102.12**
APGENCO					
Machkund	114.75	670.00	630	481.08	76.36

REGION/SECTOR/STATION-WISE ACTUAL GENERATION VIS-A-VIS TARGET OF H.E.STATIONS (I. C. ABOVE 25 MW) IN THE COUNTRY DURING THE YEAR 2024-25

REGION/ UTILITY/ STATION	INSTALLED CAPACITY AS ON 31.03.2025 (MW)	DESIGN ENERGY (MU)	2024-25		
			TARGET	ACTUAL	% OF ACTUAL OVER TARGET
Total APGENCO-Odisha	**114.75**	**670.00**	**630.00**	**481.08**	**76.36**
Total State Sector-Odisha	**2154.55**	**6346.00**	**6314.00**	**6285.36**	**99.55**
Total Odisha	**2154.55**	**6346.00**	**6314.00**	**6285.36**	**99.55**
SIKKIM					
CENTRAL SECTOR					
NHPC					
Rangit	60.00	338.61	275	320.66	116.60
Teesta-V	510.00	2572.70	0	0	
Total NHPC	**570.00**	**2911.31**	**275.00**	**320.66**	**0.00**
Total Central Sector-Sikkim	**570.00**	**2911.31**	**275.00**	**320.66**	**0.00**
STATE SECTOR					
Sikkim Urja Ltd. (SUL)					
Teesta III	1200.00	5214.00	0	0	0.00
Total TUL	**1200.00**	**5214.00**	**0.00**	**0.00**	**0.00**
Total State Sector-Sikkim	**1200.00**	**5214.00**	**0.00**	**0.00**	**0.00**
PRIVATE SECTOR					
DANS Energy Pvt. Ltd. (DEPL)					
Jorethang Loop	96.00	459.00	425	410.85	96.67
Shiga Energy Pvt. Ltd.(SEPL)					
Tashiding	97.00	425.05	435	454.71	104.53
Gati Infrastructure Pvt. Ltd. (GIPL)					
Chuzachen HEP	110.00	537.81	537	395.86	73.72
Sneha Kinetic					
Dikchu	96.00	431.00	495	35.26	7.12
MBPC					
Rongnichu	113.00	434.00	465	395.33	85.02
Total Private-Sikkim	**512.00**	**2286.86**	**2357.00**	**1692**	**71.79**
Total Sikkim	**2282.00**	**10412.17**	**2632.00**	**2012.67**	**76.47**
WEST BENGAL					

REGION/SECTOR/STATION-WISE ACTUAL GENERATION VIS-A-VIS TARGET OF H.E.STATIONS (I. C. ABOVE 25 MW) IN THE COUNTRY DURING THE YEAR 2024-25

REGION/ UTILITY/ STATION	INSTALLED CAPACITY AS ON 31.03.2025 (MW)	DESIGN ENERGY (MU)	2024-25		
			TARGET	ACTUAL	% OF ACTUAL OVER TARGET
CENTRAL SECTOR					
NHPC					
Teesta Low Dam-III	132.00	594.00	558	153.95	27.59
Teesta Low Dam-IV	160.00	719.67	720	604.55	83.97
Total NHPC	**292.00**	**1313.67**	**1278.00**	**758.50**	59.35
DVC					
Maithon	63.20	137.00	144	155.86	108.24
Total DVC-WB	**63.20**	**137.00**	**144.00**	**155.86**	**108.24**
Total Central Sector-WB	**355.20**	**1450.67**	**1422.00**	**914.36**	**64.30**
STATE SECTOR					
WBSEDCL					
Jaldhaka I	36.00	165.00	142	171.44	120.73
Purulia PSS	900.00	1235.00	1235	1361.9	110.28
Rammam II	50.00	210.00	223	202	90.58
Total WBSEDCL	**986.00**	**1610.00**	**1600.00**	**1735.34**	108.46
Total State Sector -WB	**986.00**	**1610.00**	**1600.00**	**1735.34**	108.46
Total West Bengal	**1341.20**	**3060.67**	**3022.00**	**2649.70**	87.68
Total Eastern	**5987.75**	**20204.84**	**12220.00**	**11216.85**	91.79
NORTH EASTERN REGION					
ARUNACHAL PRADESH					
CENTRAL SECTOR					
NHPC					
Lower Subansiri			0	0	0.00
Total NHPC-Ar. Pradesh			**0.00**	**0**	**0**
NEEPCO					
Kameng	600.00	3353.00	2750	2757.34	100.27
Pare	110.00	506.42	510	382.71	75.04
Ranganadi	405.00	1509.66	1312	1065.11	81.18
Total NEEPCO-Arunachal Pradesh	**1115.00**	**5369.08**	**4572.00**	**4205.16**	**91.98**

REGION/SECTOR/STATION-WISE ACTUAL GENERATION VIS-A-VIS TARGET OF H.E.STATIONS (I. C. ABOVE 25 MW) IN THE COUNTRY DURING THE YEAR 2024-25

REGION/ UTILITY/ STATION	INSTALLED CAPACITY AS ON 31.03.2025 (MW)	DESIGN ENERGY (MU)	2024-25		
			TARGET	ACTUAL	% OF ACTUAL OVER TARGET
Total Central Sector-Arunachal Pradesh			**4572.00**	**4205.16**	**91.98**
Total Arunachal Pradesh	**1115.00**	**5369.08**	**4572.00**	**4205.16**	**91.98**
ASSAM					
CENTRAL SECTOR					
NEEPCO					
Kopili	200.00	1186.14	300	588.25	196.08
Khandong	50.00	363.95	0	0	
Total NEEPCO-Aassm	**250.00**	**1550.09**	**300.00**	**588.25**	**196.08**
Total Central Sector-Assam	**250.00**	**1550.09**	**300.00**	**588.25**	**196.08**
STATE SECTOR					
APGCL					
Karbi Langpi	100.00	390.00	380	410.5	108.03
Total APGCL	**100.00**	**390.00**	**380.00**	**410.50**	**108.03**
Total State Sector-Assam	**100.00**	**390.00**	**380.00**	**410.50**	**108.03**
Total Assam	**350.00**	**1940.09**	**680.00**	**998.75**	**146.88**
NAGALAND					
CENTRAL SECTOR					
NEEPCO					
Doyang	75.00	227.24	200	215.02	107.51
Total NEEPCO-Nagaland	**75.00**	**227.24**	**200.00**	**215.02**	**107.51**
Total Central Sector-Nagaland	**75.00**	**227.24**	**200.00**	**215.02**	**107.51**
Total Nagaland	**75.00**	**227.24**	**200.00**	**215.02**	**107.51**
MANIPUR					
CENTRAL SECTOR					
NHPC					
Loktak (Manipur)	105.00	448.00	418	706.37	168.99
Total NHPC-Manipur	**105.00**	**448.00**	**418.00**	**706.37**	**168.99**

REGION/SECTOR/STATION-WISE ACTUAL GENERATION VIS-A-VIS TARGET OF H.E.STATIONS (I. C. ABOVE 25 MW) IN THE COUNTRY DURING THE YEAR 2024-25

REGION/ UTILITY/ STATION	INSTALLED CAPACITY AS ON 31.03.2025 (MW)	DESIGN ENERGY (MU)	2024-25		
			TARGET	ACTUAL	% OF ACTUAL OVER TARGET
Total Central Sector-Manipur	**105.00**	**448.00**	**418.00**	**706.37**	**168.99**
Total Manipur	**105.00**	**448.00**	**418.00**	**706.37**	**168.99**
MEGHALAYA					
STATE SECTOR					
MePGCL					
Kyrdemkulai	60.00	118.00	140	95.65	68.32
Myntdu	126.00	128.00	461	363.85	78.93
New Umtru	40.00	235.00	183	185.67	101.46
Umium St.I	36.00	324.00	116	112.72	97.17
Umium St.IV	60.00	372.69	207	147.69	71.35
Total MePGCL	**322.00**	**1177.69**	**1107.00**	**905.58**	**81.80**
Total State Sector-Meghalaya	**322.00**	**1177.69**	**1107.00**	**905.58**	**81.80**
Total Meghalaya	**322.00**	**1177.69**	**1107.00**	**905.58**	**81.80**
MIZORAM					
CENTRAL SECTOR					
Tuirial	60.00	250.63	175	240.3	137.31
Total NEEPCO-Mizoram	**60.00**	**250.63**	**175.00**	**240.30**	**137.31**
Total Central Sector-Mizoram	**60.00**	**250.63**	**175.00**	**240.30**	**137.31**
Total Mizoram	**60.00**	**250.63**	**175.00**	**240.30**	**137.31**
Total N.Eastern	**2027.00**	**9412.73**	**7152.00**	**7271.18**	**101.67**
Total All India	**47928.17**	**155974.89**	**147709.00**	**148633.98**	**100.63**
IMPORT FROM BHUTAN			**8000.00**	**5484.18**	**68.55**
Total All India (Including Bhutan Imports)	**47928.17**	**155974.89**	**155709.00**	**154118.16**	**98.98**

CHAPTER-3

MAJOR RESERVOIR BASED HE STATIONS

CHAPTER – 3

MAJOR RESERVOIR/ STORAGE BASED H.E. STATIONS

3.1 Introduction

Some of the hydro-electric schemes are provided with storage reservoirs. The excess water during monsoon period after generation is stored in these reservoirs which are utilized to augment flows during non-monsoon period. The regulated discharges from reservoirs are utilized for power generation, irrigation and other purposes. Reservoir based schemes are of two types i.e. single purpose and multipurpose. Single purpose schemes are operated in the interest of power generation while the multipurpose storage schemes are operated for more than one purpose with irrigation, water supply, flood control, pisciculture, navigation, etc. as primary objectives and power generation as incidental. Reservoir based schemes afford greater utilization of the available inflows approaching to long term average inflows resulting in greater firm power benefits. These schemes are the source of flexible generation and can be operated as base load or peaking station depending upon the requirement of the Grid System.

3.2 Major Reservoir Based Stations

44 H.E. Stations on 37 major reservoirs of aggregate installed capacity of 18295.65 MW in the country are listed below:

S. No.	H.E. Stations	Installed Capacity (MW)	Utility	State	Reservoirs	
					Name	Multipurpose (MP)/ Storage (S) for Power Only
	Northern Region					
1	Bhakra (L)	630	BBMB	Himachal Pradesh	Bhakra	MP
2	Bhakra (R)	785	BBMB			
3	Pong	396	BBMB		Pong	MP
4	Chamera-I	540	NHPC	Himachal Pradesh	Chamera	S
5	Ranjit Sagar	600	PSPCL	Punjab	Ranjit Sagar	MP
6	Tehri	1000	THDC	Uttarakhand	Tehri	MP
7	Ram Ganga	198	UJVNL	Uttarakhand	Ram Ganga	MP
8	Rihand	300	UPJVNL	Uttar Pradesh	Rihand	MP
9	RP Sagar	172	RRVUNL	Rajasthan	R.P. Sagar	MP
Sub-Total (NR)		**4621**				

S. No.	H.E. Stations	Installed Capacity (MW)	Utility	State	Reservoirs	
					Name	Multipurpose (MP)/ Storage for Power Only
	Western Region					
10	Ukai	300	GSECL	Gujarat	Ukai	MP
11	Sardar Sarovar (RBPH)	1200	SSNNL	Gujarat	Sardar Sarovar	MP
12	Gandhi Sagar	115	MPPGCL	Madhya Pradesh	Gandhi Sagar	MP
13	Bansagar-III	30	MPPGCL	Madhya Pradesh	Bansagar	MP
14	Indira Sagar	1000	NHDC	Madhya Pradesh	Indira Sagar	MP
15	Koyna-I&II	600	MAHAGENCO	Maharashtra	Koyna	MP
16	Koyna-IV	1000	MAHAGENCO	Maharashtra		
17	Koyna DPH	36	MAHAGENCO	Maharashtra		
18	Pench	160	MPPGCL	Maharashtra	Pench	MP
19	Bhira	150	TPCL	Maharashtra	Bhira	MP
20	Bhira PSS	150				
Sub-Total (WR)		**4741**				
	Southern Region					
21	Upper Sileru	240	APGENCO	Andhra Pradesh	Sileru	S
22	Lower Sileru	460	APGENCO	Andhra Pradesh		
23	Srisailam RB	770	APGENCO	Andhra Pradesh	Srisailam	MP
24	NJ Sagar + NJ Sagar PSS	815.6	TSGENCO	Telangana	Nagarjuna Sagar	MP
25	Sharavathy	1035	KPCL	Karnataka	Sharavathy	S
26	Kalinadi (Nagjhari)	900	KPCL	Karnataka	Supa	S
27	Supa DPH	100	KPCL	Karnataka		
28	Almatti	290	KPCL	Karnataka	Almatti	MP
29	Varahi	460	KPCL	Karnataka	Varahi	S
30	Idukki	780	KSEB	Kerala	Idukki	MP
31	Sabarigiri	300	KSEB	Kerala	Sabarigiri	MP
32	Pallivasal	37.5	KSEB	Kerala	Madupetty	S
33	Idamalayar	75	KSEB	Kerala	Idamalayar	MP
34	Mettur Dam	50	TANGEDCO	Tamil Nadu	Mettur	MP

S. No.	H.E. Stations	Installed Capacity (MW)	Utility	State	Reservoirs	
					Name	Multipurpose (MP)/ Storage for Power Only
35	Mettur Tunnel	200	TANGEDCO	Tamil Nadu	Mettur	MP
36	Periyar	161	TANGEDCO	Tamil Nadu	Periyar	MP
Sub-Total (SR)		**6674.10**				
	Eastern and North Eastern Region					
37	Machkund	114.75	APGENCO	Odisha	Machkund	MP
38	Hirakud I (Burla)	287.8	OHPC	Odisha	Hirakud	MP
39	Hirakud II (Chiplima)	72				
40	Balimela	510	OHPC	Odisha	Balimela	MP
41	Indravati	600	OHPC	Odisha	Indravati	MP
42	Upper Kolab	320	OHPC	Odisha	Upper Kolab	MP
43	Rengali	250	OHPC	Odisha	Rengali	MP
44	Loktak	105	NHPC	Manipur	Loktak	MP
Sub-Total (ER/NER)		**2259.55**				
Total (All India)		**18295.65**				

Salient details of 37 Nos. Major reservoirs are indicated in **Annex-3.1**. These stations constitute about 32.92% (30.42% Multipurpose & 2.50% Storage for power only) of the total hydel installed capacity and generated about 36.46% (27.48% Multipurpose & 8.98% Storage for power only) of the total Hydel generation during 2024-25 as briefly indicated in **Table-3.1.**

TABLE - 3.1

CONTRIBUTION BY IMPORTANT RESERVOIR (STORAGE) BASED H.E. STATIONS

S. No.	Description	Major Reservoir Based Stations		Other Stations	Total
		Multipurpose (MP)	Storage for Power only		
1.	Installed Capacity (MW)	14517.15	1195	32016.02	47728.17
	Percentage of Total (%)	30.42	2.50	67.08	100
2.	Energy Generation (MU)	40842.64	14570.55	93220.79	148633.98
	Percentage of Total (%)	27.48	9.80	62.72	100

3.3 Inflows

Inflows to the reservoirs are primarily dependent on rainfall during monsoon in the catchment area of the reservoirs. However, in case of the hydro projects in Himalayan Region including Bhakra, Pong, Ranjit Sagar and Tehri projects etc., snow melt in the catchment area during summer also contributes to their inflows. The inflows into the reservoirs during 2024-25 vis-à-vis 2023-24 are given at **Exhibit 3.1**. Inflows into the reservoirs and generation during the year 2024-25 vis-à-vis 2023-24 and 10 years average is given below at **Table-3.2.**

TABLE 3.2

HYDRO RESERVOIRS (STORAGE TYPE) - INFLOW & ENERGY GENERATION

S. No.	STATION	Inflows				Generation			
		10 years Average (MCM)	2023-24 (MCM)	2024-25 (MCM)	2024-25 Inflow as % of 2023-24 inflow	10 years Average (MU)	2023-24 (MU)	2024-25 (MU)	2024-25 generation as compared to 2023-24 (%)
1	2	3	4	5	6=(5/4*100)	7	8	9	10=(9/8*100)
Northern Region									
1	Bhakra	16853	17775	15673	88	5221	5749	5084	88
2	Pong	8790	12871	7659	60	1545	1807	1532	85
3	Ranjit Sagar	6833	90794	5360	6	1589	1843	1259	68
4	Chamera-I*	6115	6830	5330	78	2265	2170	2089	96
5	Tehri	7066	7263	7631	105	3159	3249	3374	104
6	Ram Ganga	498769	65502	21560	33	286	318	365	115
7	RP Sagar	5754	4536	4418	97	313	491	401	82
8	Rihand	5266	3727	6720	180	556	332	635	191
Sub Total (NR)		**555445**	**209297**	**74350**	**36**	**14934**	**15959**	**14739**	**92**
Western Region									
9	Ukai	10346	8182	15334	187	581	580	776	134
10	Sardar Sarovar	30461	31476	40265	128	2016	2510	3596	143
11	Gandhi Sagar	6046	5336	4313	81	259	295	276	93
12	Bansagar*		5375	6852	127	99	165	112	68
13	Pench*		1614	2201	136	314	367	443	121
14	Indira Sagar	25342	30006	33331	111	2517	3000	3631	121
15	Koyna	2344	3038	5035	166	2957	2425	2624	108
16	Bhira	1031	881	1316	150	1010	958	916	96
Sub Total (WR)		**75570**	**85907**	**108648**	**126**	**9752**	**10302**	**12374**	**120**

	Southern Region								
S. No.	STATION	Inflows				Generation			
		10 years Average (MCM)	2023-24 (MCM)	2024-25 (MCM)	2024-25 Inflow as % of 2023-24 inflow	10 years Average (MU)	2023-24 (MU)	2024-25 (MU)	2024-25 generation as compared to 2023-24 (%)
1	2	3	4	5	6= (5/4*100)	7	8	9	10= (9/8*100)
17	Srisailam	25542	3828	39585	1034	896.42	6	1167	19219
18	Upper Sileru	2240	1726	2780	161	474	362	605	167
19	Lower Sileru	3551	2847	4655	164	1062	1005	1227	122
20	N.J. Sagar	22055	4107	35504	865	1064	541	1923	356
21	Sharavathy	4508	6359	6638	104	4116	3358	4982	148
22	Supa	2861	2304	4218	183	3187	2962	4491	152
23	Almatti	-	6411	24898	388	467	242	625	258
24	Varahi	628	427	796	186	995	648	1161	179
25	Idukki	1787	1243	1733	139	2367	1645	2413	147
26	Sabarigiri	870	1367	813	59	1282	1130	1320	117
27	Madupetty	103	64	125	195	152	157	15	10
28	Idamalayar	1159	827	1249	151	292	198	340	171
29	Mettur	6956	2084	8165	392	527	228	480	211
30	Periyar	650	523	634	121	508	440	560	127
Sub Total (SR)		**72910**	**34116**	**131794**	**386**	**17391**	**12921**	**21309**	**165**
Eastern Region									
31	Machkund	1482	1376	1533	111	618	863	481	56
32	Hirakud	25672	31463	28769	91	894	1177	999	85
33	Balimela	4029	3716	4976	134	1278	1035	1668	161
34	Indravati	3428	9152	2652	29	1687	1726	1424	83
35	Upper Kolab	1384	1598	1389	87	704	581	809	139
36	Rengali	11071	14606	10958	75	774	780	905	116
Sub Total (ER)		**47065**	**61912**	**50278**	**81**	**5955**	**6162**	**6285**	**102**
North Eastern Region									
37	Loktak	2012	869	2767	318	564	298	706	237
Sub Total (NER)		**2012**	**1934**	**2767**	**318**	**564**	**298**	**706**	**237**
Total (All India)		**753002**	**392102**	**367837**	**94**	**48597**	**45642**	**55413**	**121**

3.4 Reservoir Levels

The maximum reservoir level attained during the year depends on the depleted reservoir level in the preceding year, besides the inflows during the current year. Water level touched FRL at Rana Pratap, Ukai, Sardar Sarovar, Gandhi Sagar, Bansagar, Pench, Indira Sagar, Nagarjuna Sagar, Srisailam, Almatti & Hirakud reservoirs during 2024-25. Month-wise maximum levels of major reservoirs during 2024-25 vis-à-vis 2023-24 are indicated at **Exhibits 3.2** to **Exhibits 3.11**.

3.5 Generation

Generation from reservoir (storage) based H.E. Stations during the year, apart from priorities of releases for other purposes like irrigation, drinking water etc., depends on various factors such as water level of the reservoir at the end of the preceding year, inflows during the year, draw down level by the end of the year, availability of generating units etc. In 31 Nos. out of 44 Nos. reservoir based hydel stations, annual generation during the year 2024-25 was more than the annual generation targets. Generation from 44 H.E. Stations on 37 major reservoirs during the year 2024-25 has been 55413.19 MU, showing decrease by 2.16 % over the 2023-24 generation of 56635.24 MU. Station-wise generation of reservoir stations during the year 2024-25 as compared to that of last year 2023-24 is shown in **Table 3.2** above. The reservoir based stations have been grouped in terms of percentage achievement of generation over targets in **Table 3.3** below:

TABLE 3.3

GENERATION PERFORMANCE OF MAJOR RESERVOIR BASED STATIONS

S. No.	% of Actual Generation over Target	Reservoir based Stations		
		No.	% of total Reservoir based Stations	Name
1	120 & Above	14	31.82	Pong, R.P. Sagar, Ram Ganga, Sardar Sarovar RBPH, Indira Sagar, Pench, Upper sileru I & II, Almatti Dam, Kalinadi, Supa DPH, Periyar, N.J.Sagar PSS, Balimela & Loktak (Manipur)
2	110 - 120	10	22.73	Bhakra L&R, Tehri, Bansagar Tons-III, Koyna DPH, Koyna St.I&II, Lower Sileru, Sharavathy, Rengali, Upper Kolab & Srisailam RB
3	100 - 110	7	15.91	Rihand, Ukai, Gandhi Sagar, Bhira, Bhira PSS, Varahi & Idamalayar

4	Below 100	13	29.54	Chamera-I, Ranjit Sagar, Koyna IV, Idamalayar, Sabarigiri, Mettur Dam, Mettur Tunnel, Hirakud I & Hirakud II, Upper Indravati, Machkund & Pallivasal

Generation of major reservoir based H.E. stations during 2024-25 as compared to the generation during last year i.e. 2023-24 is also depicted at **Exhibit-3.12**.

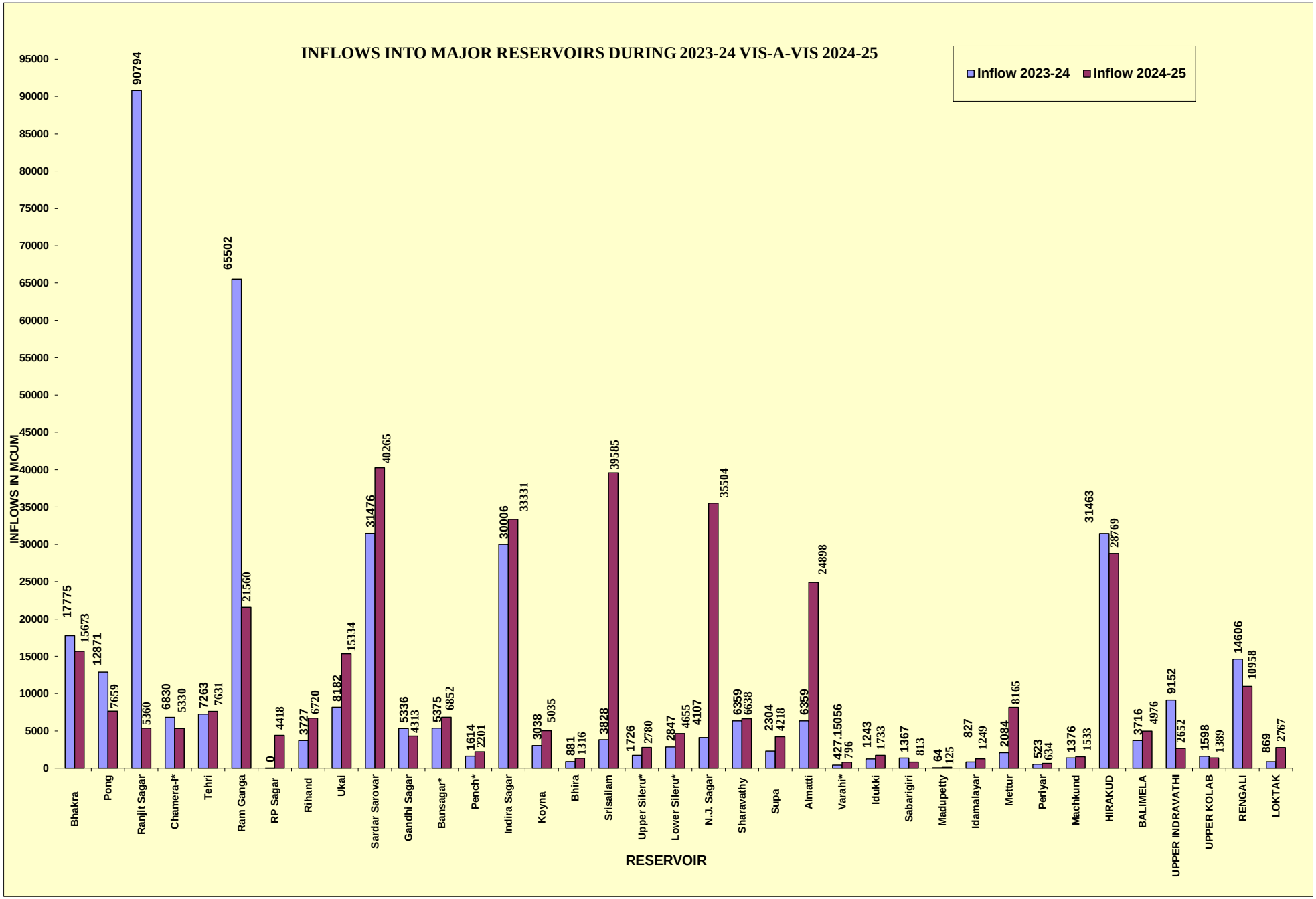
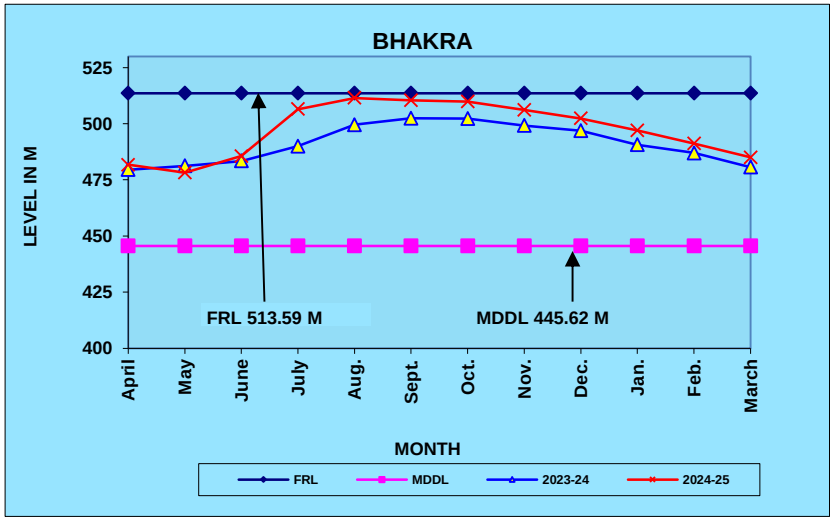
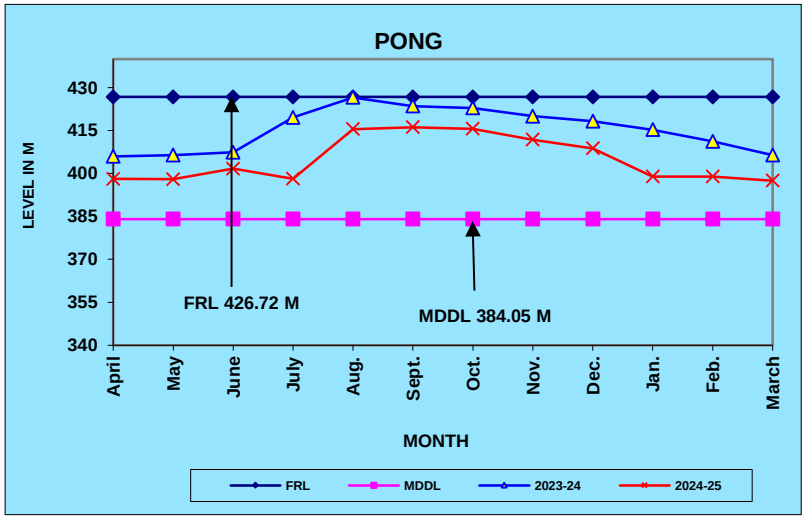
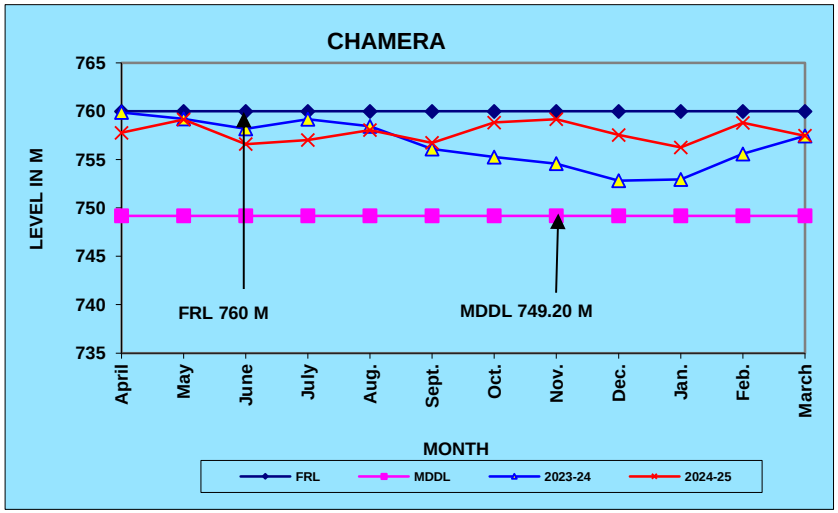

INFLOWS INTO MAJOR RESERVOIRS DURING 2023-24 VIS-A-VIS 2024-25
Inflow 2023-24
Inflow 2024-25
INFLOWS IN MCUM
RESERVOIR
Bhakra 17775 15673
Pong 12871 7659
Ranjit Sagar 90794 5360
Chamera-I* 6830 5330
Tehri 7263 7631
Ram Ganga 65502 21560
RP Sagar 0 4418
Rihand 3727 6720
Ukai 8182 15334
Sardar Sarovar 31476 40265
Gandhi Sagar 5336 4313
Bansagar* 5375 6852
Pench* 1614 2201
Indira Sagar 30006 33331
Koyna 3038 5035
Bhira 881 1316
Srisailam 3828 39585
Upper Sileru* 1726 2780
Lower Sileru* 2847 4655
N.J. Sagar 4107 35504
Sharavathy 6359 6638
Supa 2304 4218
Almatti 6359 24898
Varahi* 427.15056 796
Idukki 1243 1733
Sabarigiri 1367 813
Madupetty 64 125
Idamalayar 827 1249
Mettur 2084 8165
Periyar 523 634
Machkund 1376 1533
HIRAKUD 31463 28769
BALIMELA 3716 4976
UPPER INDRAVATHI 9152 2652
UPPER KOLAB 1598 1389
RENGALI 14606 10958
LOKTAK 869 2767

EXHIBIT 3.2

MONTH-WISE MAXIMUM LEVEL OF IMPORTANT RESERVOIRS







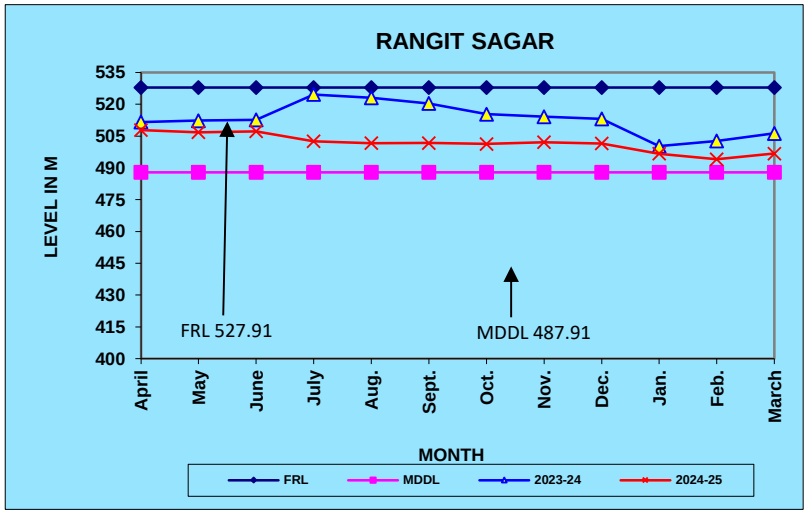
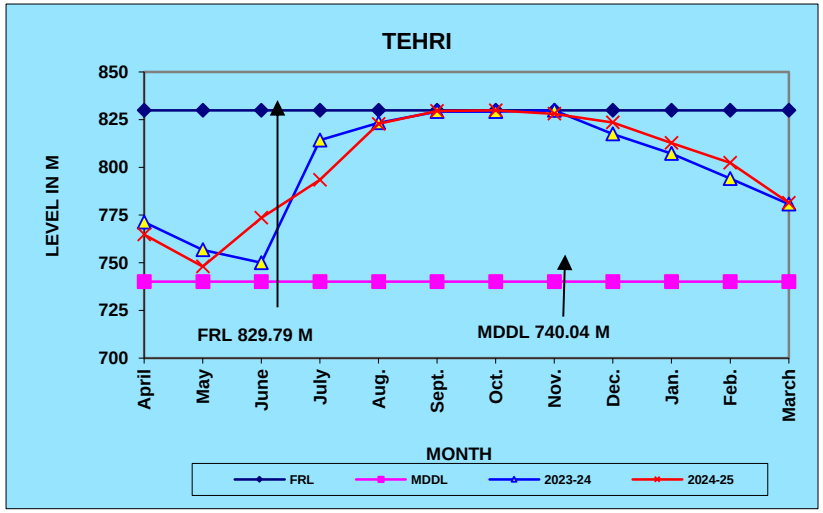
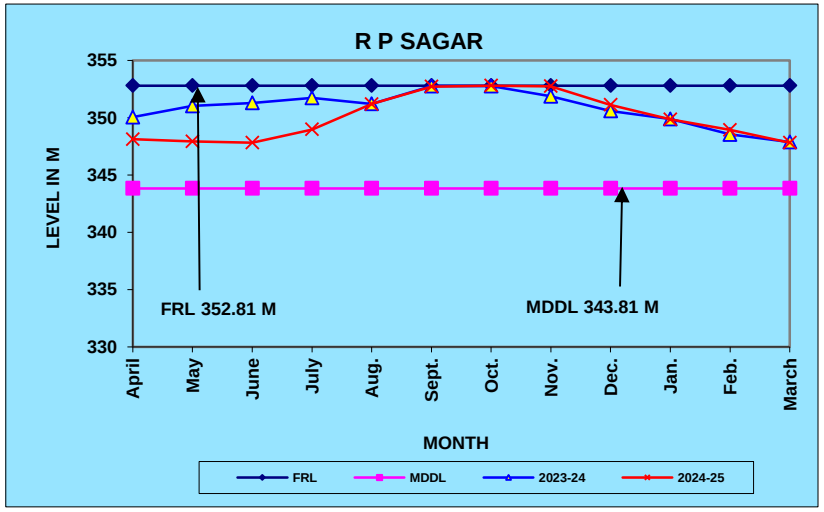
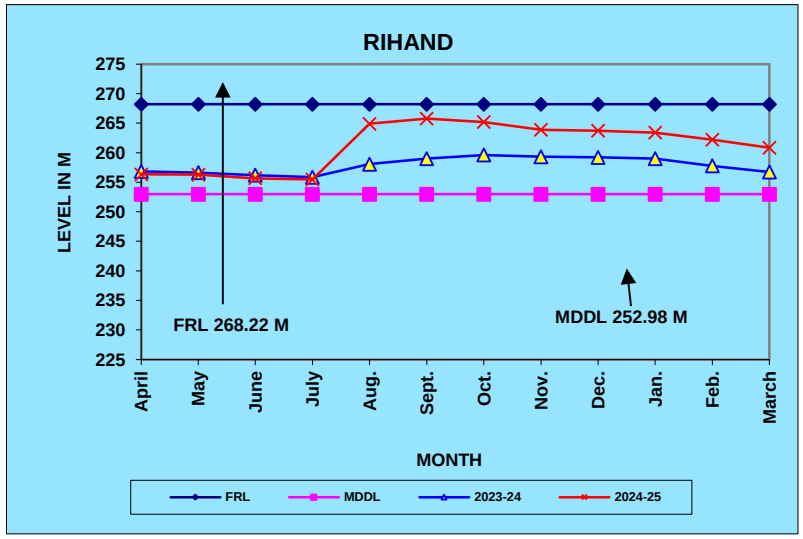


EXHIBIT 3.3

MONTH-WISE MAXIMUM LEVEL OF IMPORTANT RESERVOIRS







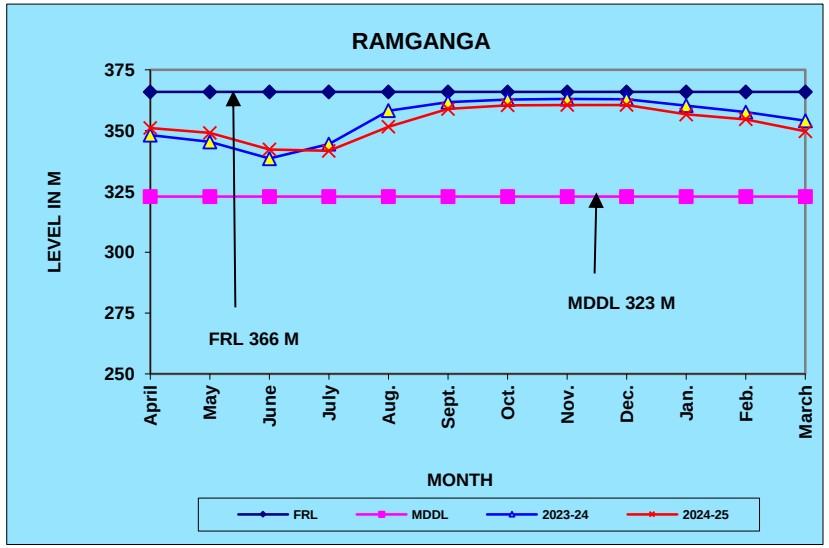
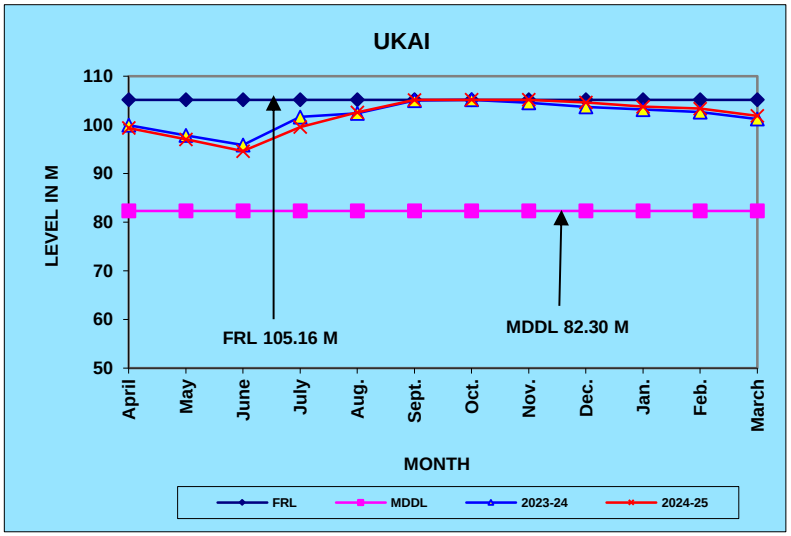
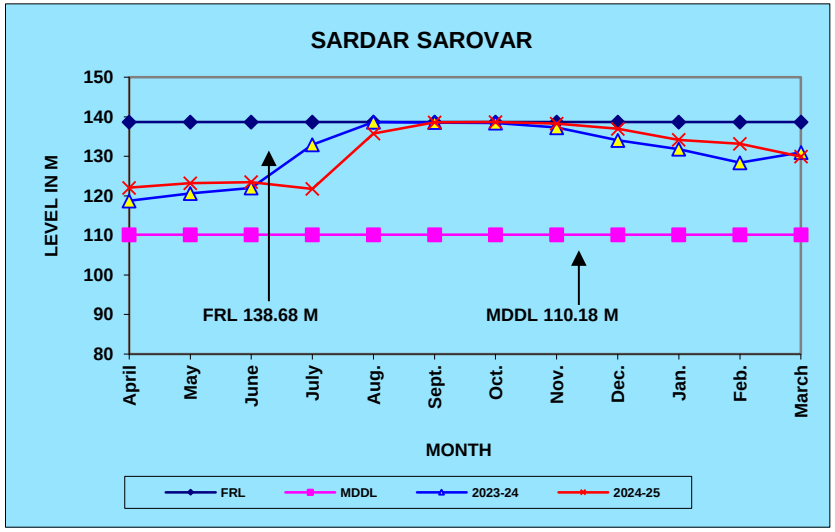
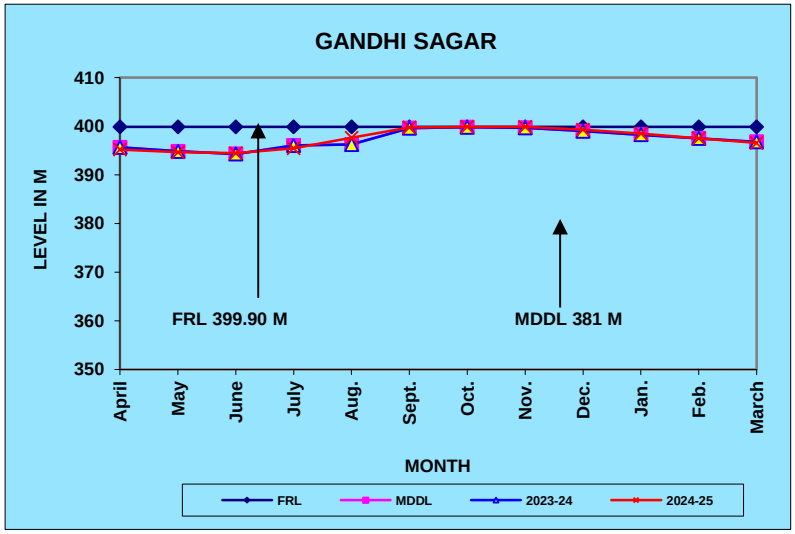


EXHIBIT 3.4

MONTH-WISE MAXIMUM LEVEL OF IMPORTANT RESERVOIRS







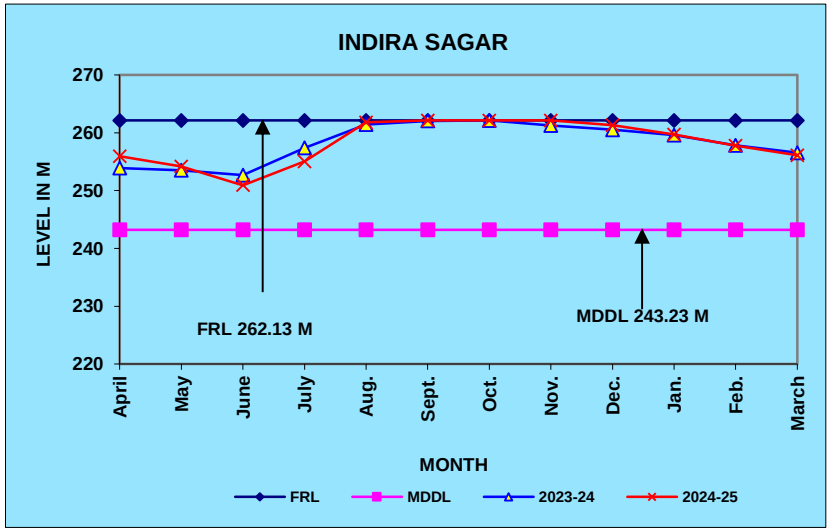
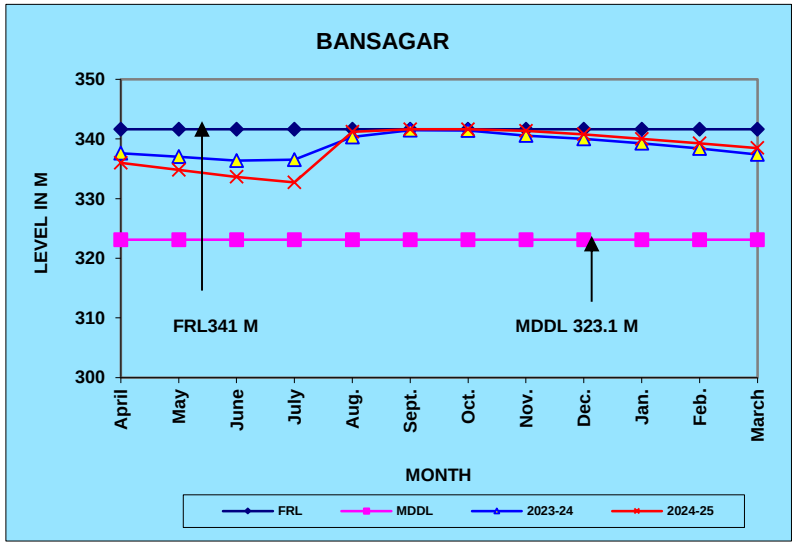
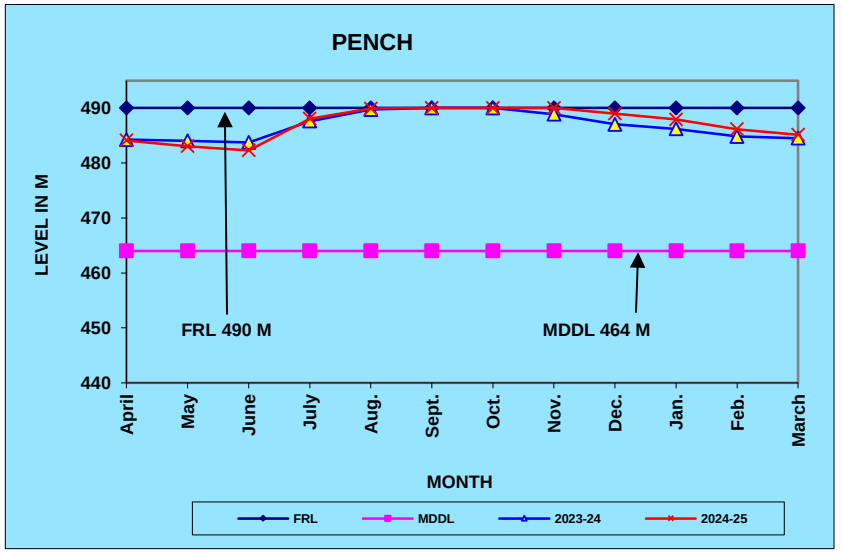
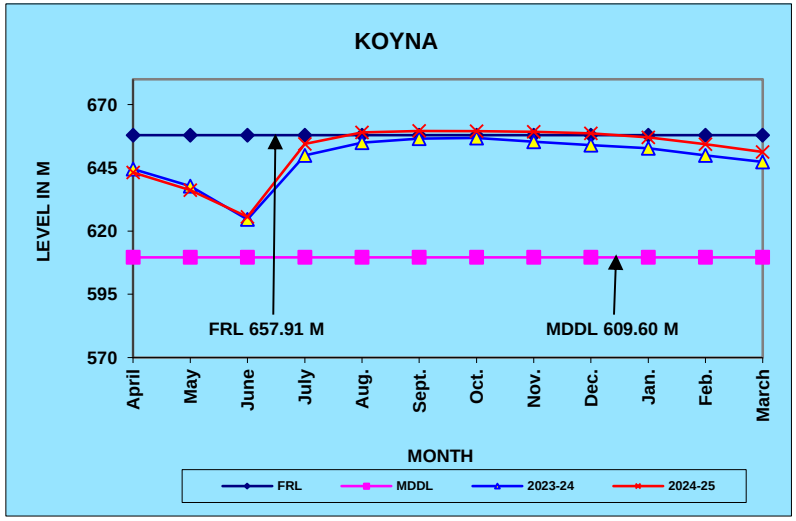


EXHIBIT 3.5

MONTH-WISE MAXIMUM LEVEL OF IMPORTANT RESERVOIRS







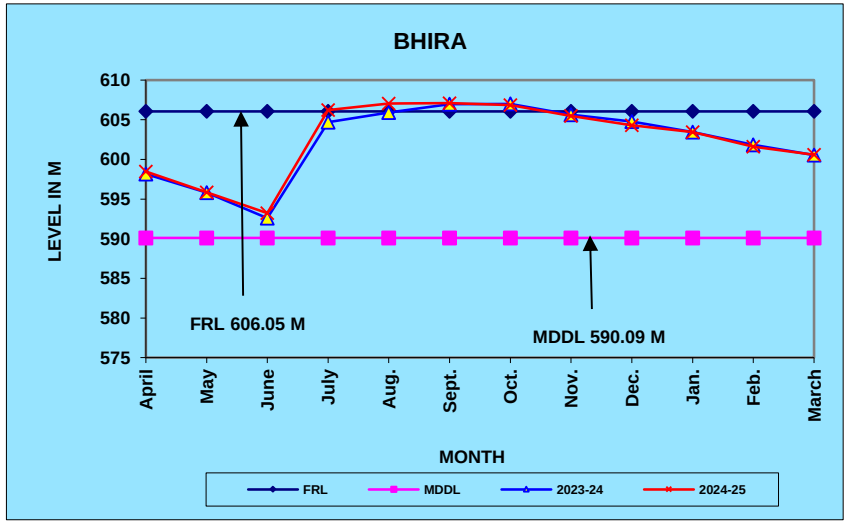
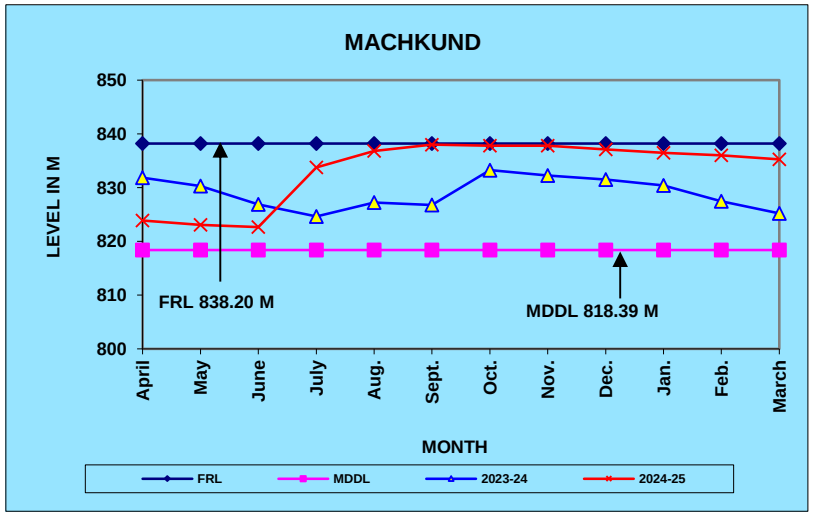
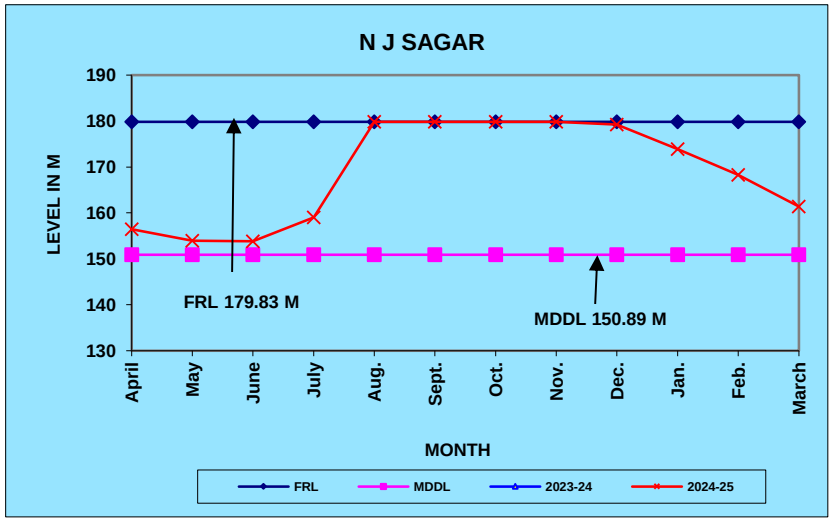
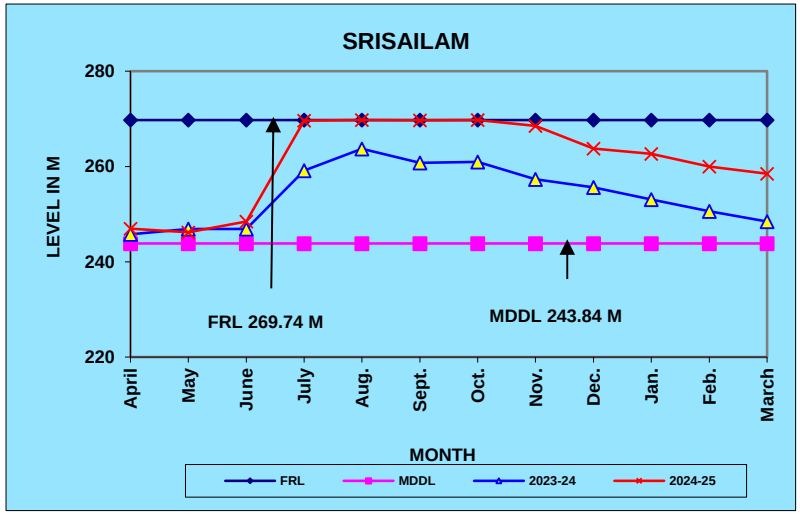


EXHIBIT 3.6

MONTH-WISE MAXIMUM LEVEL OF IMPORTANT RESERVOIRS







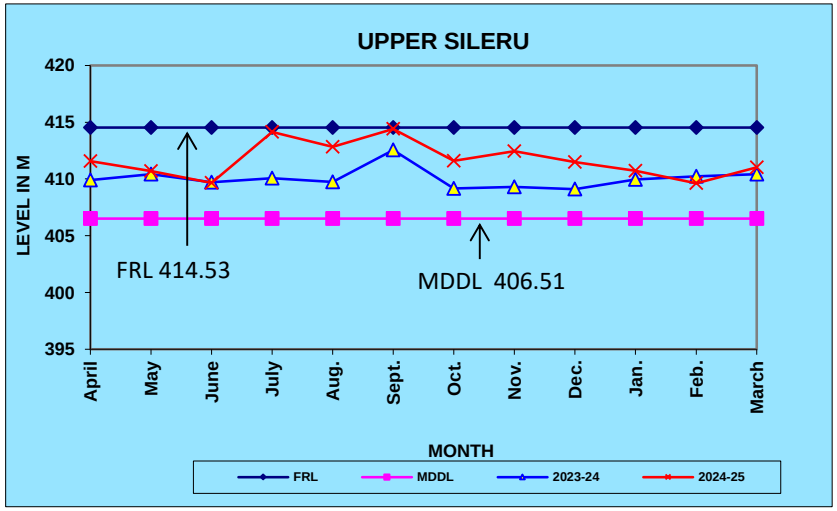
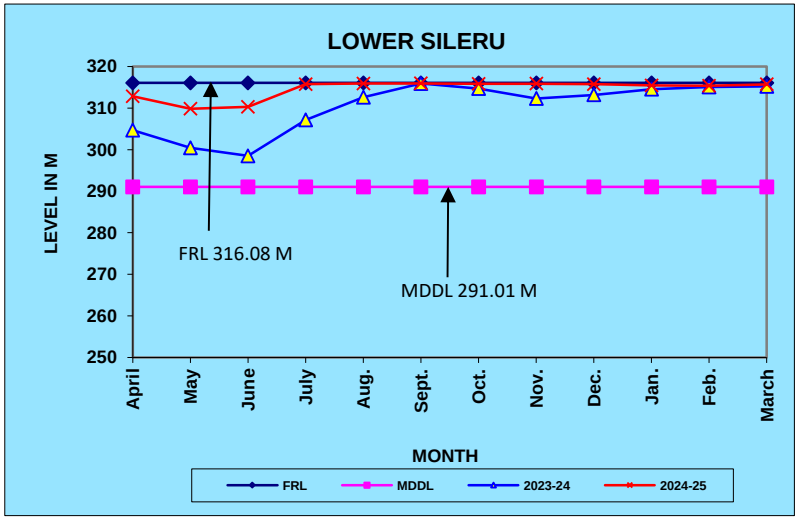
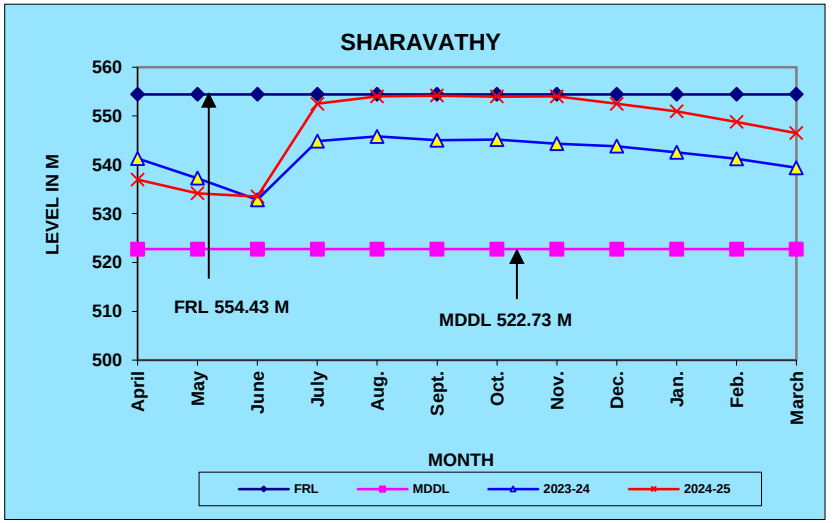
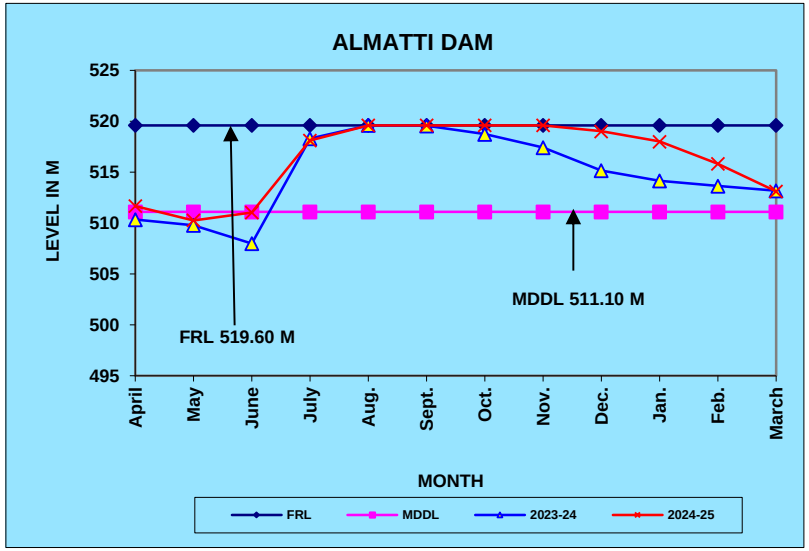


EXHIBIT 3.7

MONTH-WISE MAXIMUM LEVEL OF IMPORTANT RESERVOIRS







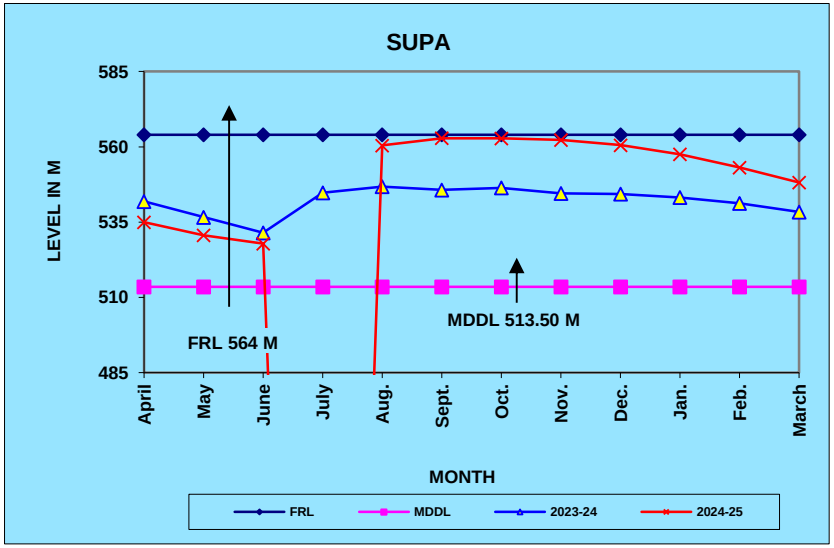
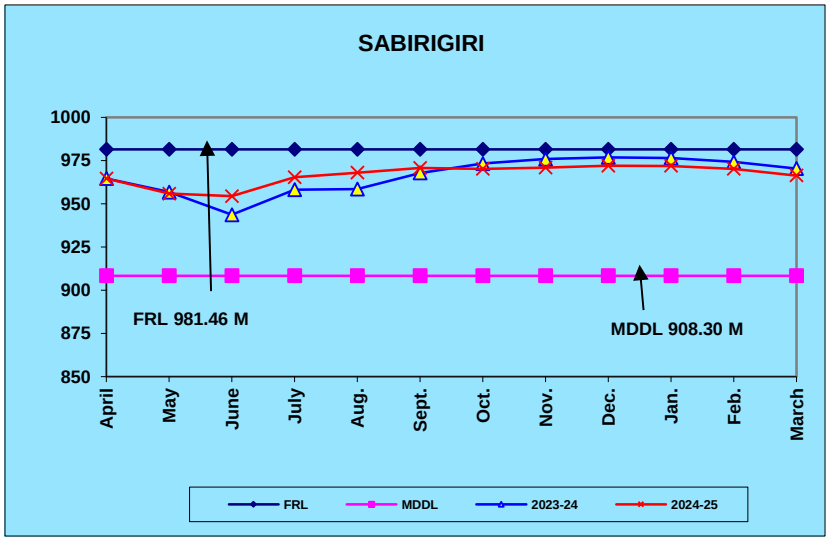
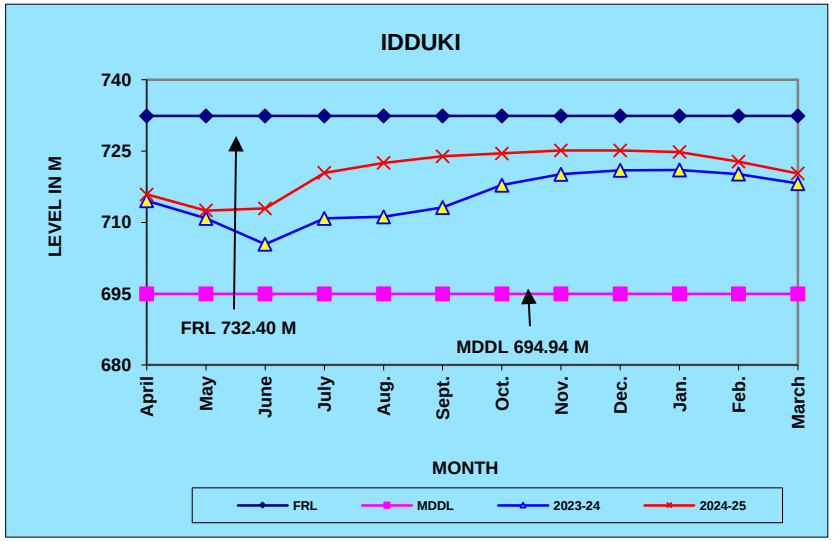
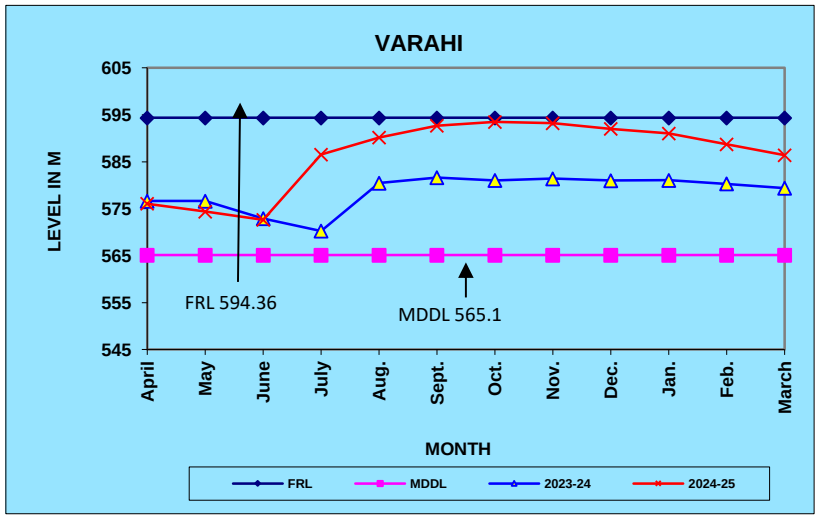


EXHIBIT 3.8

MONTH-WISE MAXIMUM LEVEL OF IMPORTANT RESERVOIRS







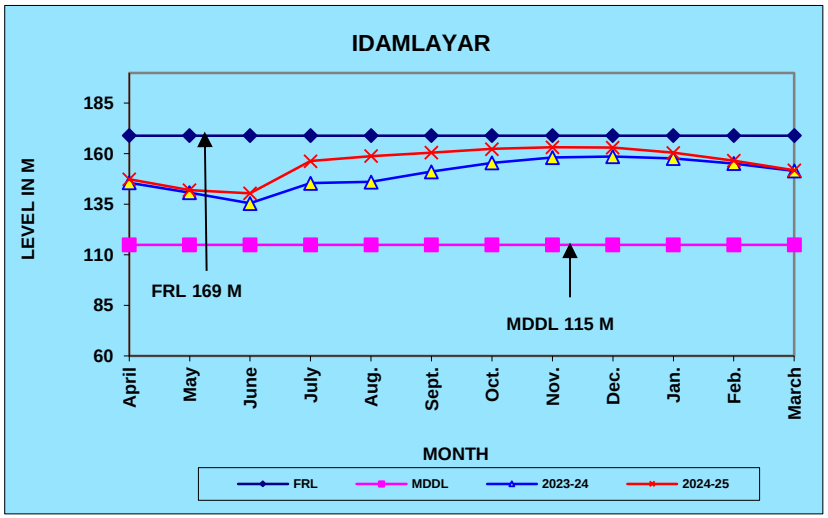
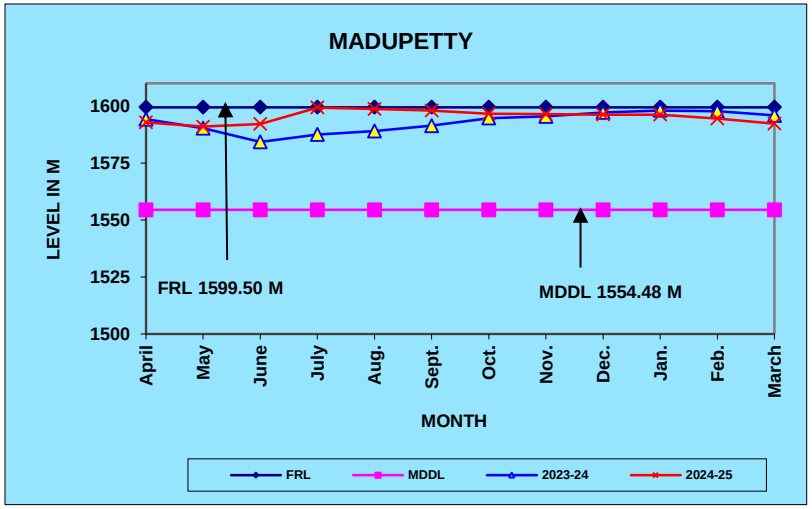
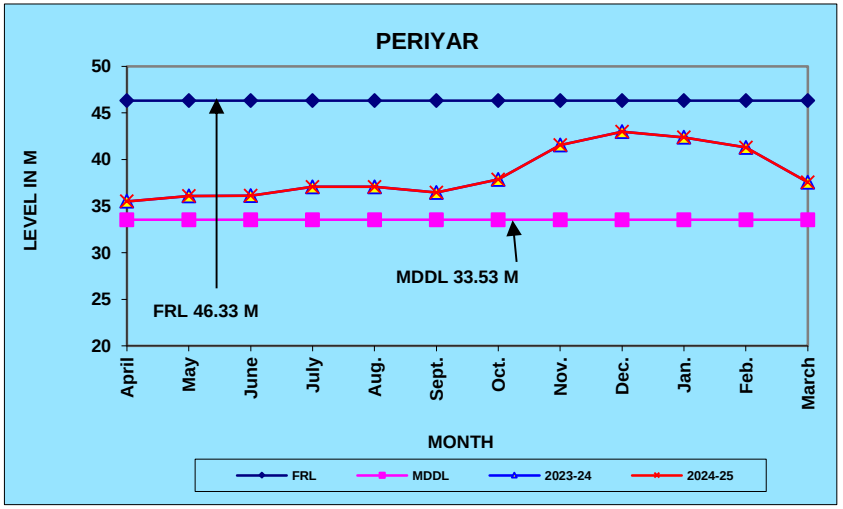
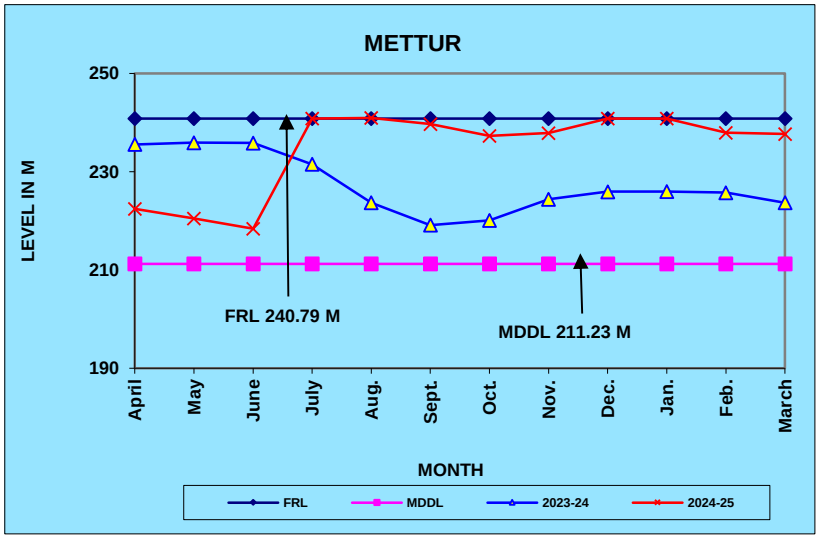


EXHIBIT 3.9

MONTH-WISE MAXIMUM LEVEL OF IMPORTANT RESERVOIRS







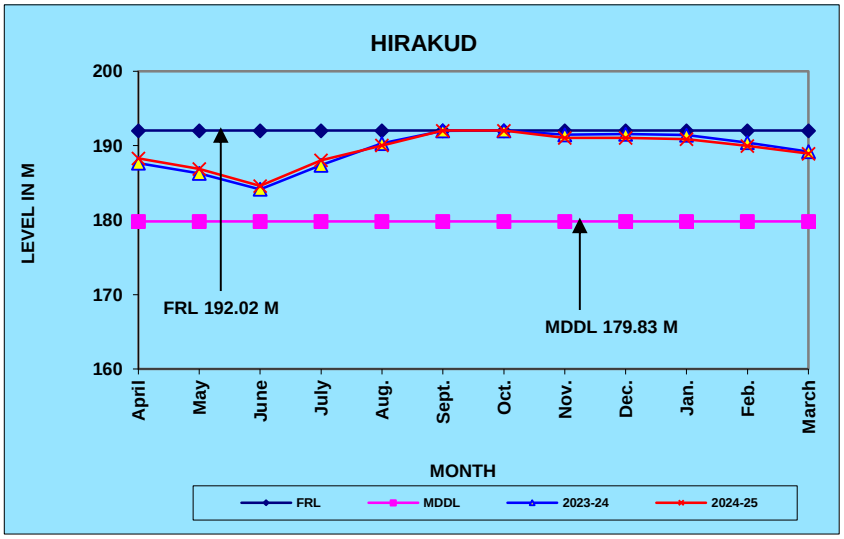
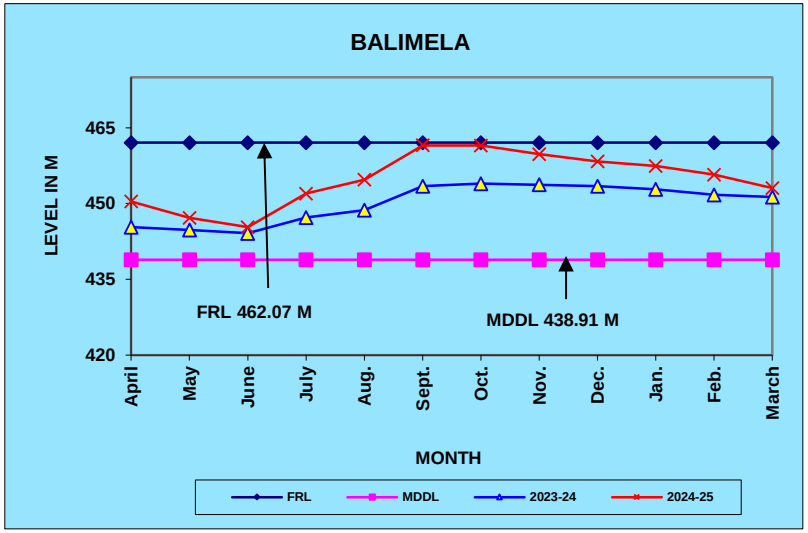
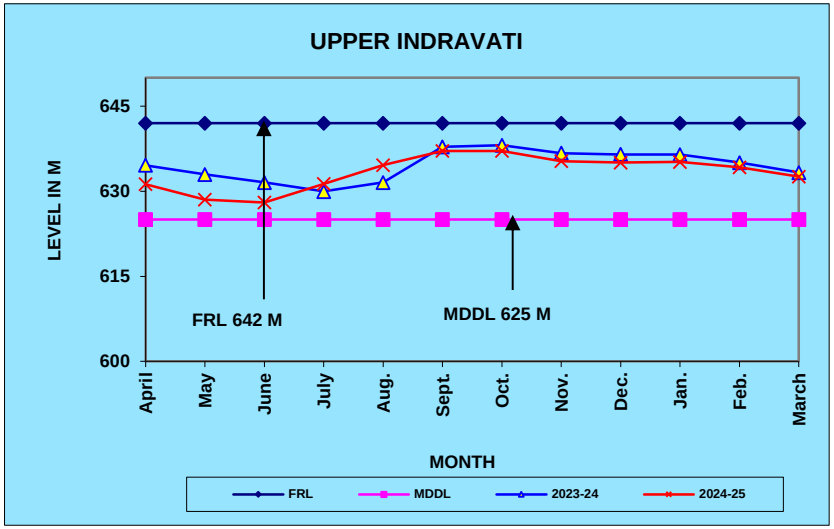
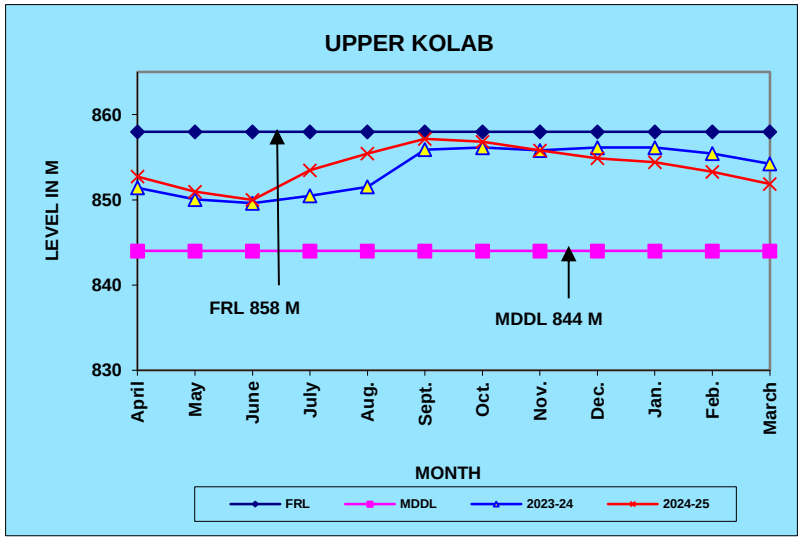


EXHIBIT 3.10

MONTH-WISE MAXIMUM LEVEL OF IMPORTANT RESERVOIRS







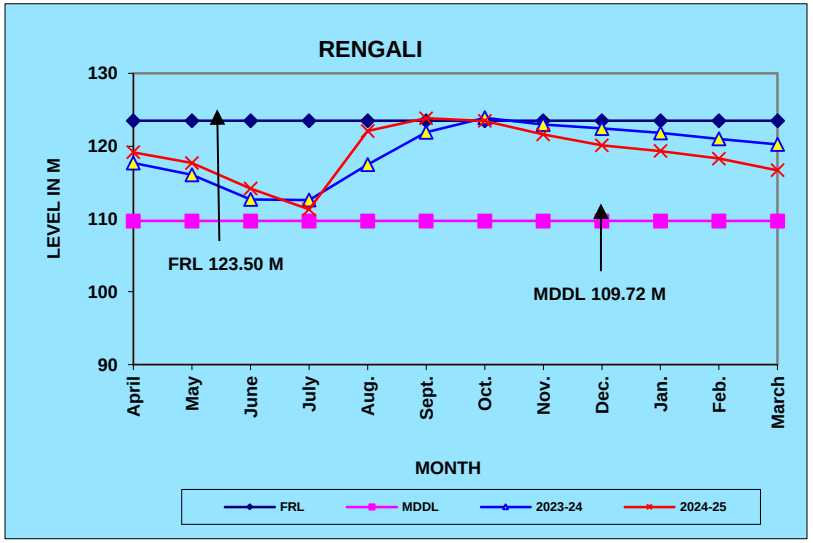


EXHIBIT 3.11

MONTH-WISE MAXIMUM LEVEL OF IMPORTANT RESERVOIRS

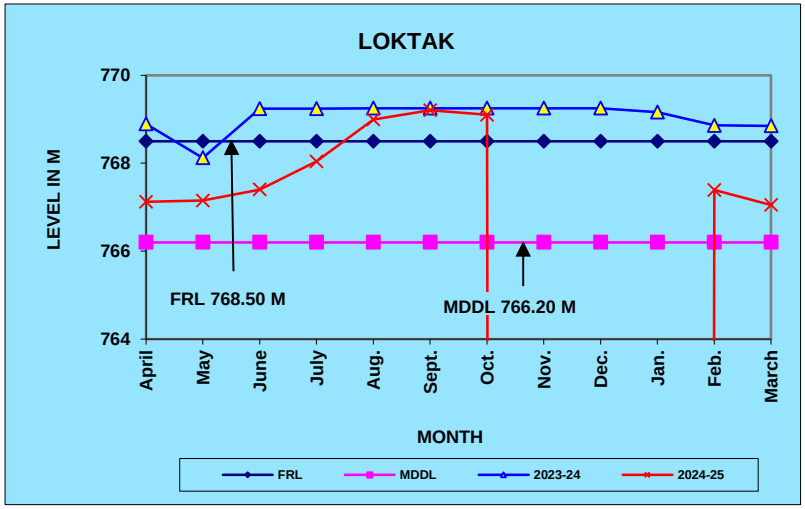
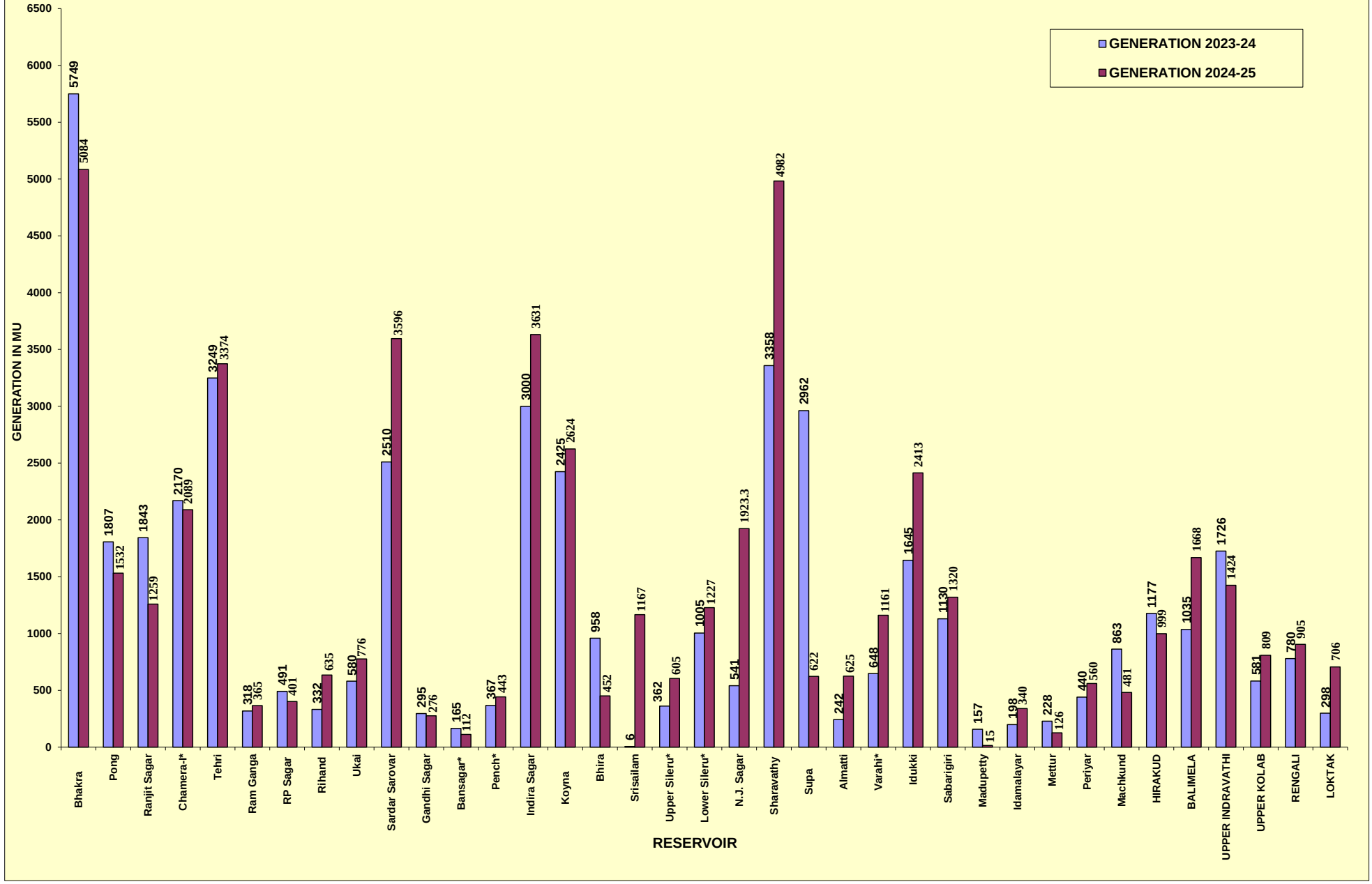


EXHIBIT-3.12

GENERATION FROM RESERVOIR (STORAGE) BASED HYDROELECTRIC STATIONS DURING 2023-24 VIS-A-VIS 2024-25



SALIENT DETAILS OF IMPORTANT RESERVOIRS AND ASSOCIATED H.E. STATIONS

S. No	NAME OF RESERVOIR AND ASSOCIATED HE STATIONS	INSTALLED CAPACITY AS ON 31.03.2025	ANNUAL DESIGN ENERGY	FULL RESER-VOIR LEVEL	MINIMUM DRAW DOWN LEVEL	RESERVOIR CAPACITY AT FRL		ENERGY CONTENT AT FRL	LEVELS ATTAINED DURING 2024-25			
						GROSS :	LIVE		Max.	DATE	Min.	DATE
		(MW)	(MU)	(M)	(M)	(MCM)	(MCM)	(MU)	(M)		(M)	
NORTHERN REGION												
1	Bhakra	1379.00	3924	513.59	445.62	8321	6516	1729.00	502.43	29.09.2024	473.30	31.03.2025
a	Bhakra Left	594.00	3924									
b	Bhakra Right	785.00										
2	Pong	396.00	1123	426.72	384.05	8053	6946	1084.00	416.18	17.09.2024	395.17	30.03.2025
3	Chamera	540.00	1664.56	760.00	749.20		87		759.19	12.11.2024	752.45	20.02.2025
4	Ranjit Sagar	600.00	1507	527.91	487.91	3292	2191	390.00	507.86	19-Apr-24	490.93	27-Feb-25
5	Tehri	1000.00	2797	829.79	740.04	3540	2615	1291.49	829.74	06.10.2024	742.26	08.05.2024
6	Ramganga	198.00	334	366	323	2503.96	2109.25	480.80	360.62	02.12.2024	333.51	01.07.2024
7	Rana Pratap Sagar	172.00	459	352.81	343.83	2901	1569	175.66	352.81	06.10.2024	347.20	17.03.2025
8	Rihand	300.00	920	268.22	252.98	10605	5723	1177.00	265.76	18.09.2024	255.12	25.07.2024
	Sub-Total NR	**4585.00**	**12728.56**				**27756.25**					
WESTERN REGION												
9	Ukai	300.00	1080	105.16	82.30	8515	6615	813.00	105.156	01.10.2024, 03.11.2024	93.083	27.06.2024
10	Sardar Sarovar	1200.00	3635	138.68	110.18	9460	5760	1817.553	138.68	01.10.2024	118.30	12.07.2024
11	Gandhi Sagar	115.00	420	399.90	381.00	7743	6911	725.00	399.90	31.10.2024 , 01.11.2024	394.31	30.06.2024, 01.07.2024
12	Bansagar	60.00	143	341.64	323.10		4934		341.64	21.09.2024 & 01.10.2024	331.74	23.07.2024
13	Pench	160.00	315	490.00	464.00		1045		490	30.09.2024, 01.10.2024 & 01.11.2024	481.93	15.06.2024
14	Indira Sagar	1000.00	1980	262.13	243.23	12237	9706	1316.12	262.13	12-09-2024, 04-10-2024, 02-11-2024	247.62	20.07.2024
15	Koyna	1636.00	3030	657.91	609.60	2797	2677	3126.00	659.55	29.09.2024	622.10	19.06.2024
a	Koyna-I & II	600.00	3030									
c	Koyna-I & II	1000										
d	Koyna DPH	36										
16	Bhira	300	775	606.05	590.09	523	522	619	607.10	01.09.2024	591.00	26.06.2024
	Sub-Total WR	**4771.00**	**11378.84**				**38170.33**					
SOUTHERN REGION												
17	Upper Sileru	240.00	529	414.53	406.51		88		414.41	09.09.2024	408.46	10.07.2024, 24.05.2024
18	Lower Sileru	460.00	1070	316.08	291.01		365		315.96	07.09.2024	305.10	27.05.2024
19	Srisailam	770.00	2900	269.74	243.84	8723	7166	1548.00	269.75	28.08.2024, 24.10.2024	245.73	27.05.2024, 01.06.2024
20	Nagarjuna Sagar	815.60	2237	179.83	150.89	11560	6538	1398.00	179.83	15.08.2024, 14.09.2024, 31.10.2024, 01.11.2024	153.31	14.07.2024
21	Sharavathy	1035.00	4932	554.43	522.73	5310	4297	4394.00	554.16	11.09.2024	531.43	08.06.2024
22	SUPA	955.00	3927	564.00	513.50	4178	3758	3927.00	562.88	15.09.2024	525.73	27.06.2024

SALIENT DETAILS OF IMPORTANT RESERVOIRS AND ASSOCIATED H.E. STATIONS

S. No	NAME OF RESERVOIR AND ASSOCIATED HE STATIONS	INSTALLED CAPACITY AS ON 31.03.2025	ANNUAL DESIGN ENERGY	FULL RESER-VOIR LEVEL	MINIMUM DRAW DOWN LEVEL	RESERVOIR CAPACITY AT FRL		ENERGY CONTENT AT FRL	LEVELS ATTAINED DURING 2024-25			
						GROSS :	LIVE		Max.	DATE	Min.	DATE
		(MW)	(MU)	(M)	(M)	(MCM)	(MCM)	(MU)	(M)		(M)	
23	Almatti	290.00	483	519.60	511.10	2631.50	2628.00	175.30	519.60	25.08.2024, 26.09.2024, 04.10.2024, 01.11.2024	507.95	01.06.2024
24	Varahi	460.00	1060	594.36	565.10		881.50		593.49	27.10.2024	571.41	23.06.2024
25	Idukki	780.00	2398	732.40	694.94	1996	1459	2146.00	725.13	11.11.2024	709.47	21.06.2024
26	Sabirigiri	300.00	1338	981.46	908.30	454	447	764.00	971.94	27.12.2024	944.97	23.06.2024
27	Madupetty	37.50	284	1599.50	1554.48		55.32	77.40	1599.35	30.07.2024	1588.60	04.05.2024
28	Idamalayar	75.00	380	169.00	115.00		1017.80	254.45	163.30	23.11.2024	136.84	23.06.2024
29	Mettur	250.00	541	240.79	211.23	2708.80	2645.20	204.00	240.92	13.08.2024	216.30	03.07.2024
30	Periyar	161.00	409	46.33	33.53	443	299	216	40.24	13.09.2024	34.44	31.03.2025
	Sub-Total SR	**6629.10**	**22488.00**				**31645**					
EASTERN REGION												
31	Machkund	114.75	670	838.20	818.39	970	893	552.00	838.00	09.09.2024	822.03	26.06.2024
32	Hirakud	347.50	1174	192.02	179.83	4823	4709	372.00	192.02	29.09.2024, 07.10.2024	182.88	28.06.2024
33	Balimela	510.00	1183	462.07	438.91	3929	2676	898.00	461.51	28.09.2024	442.30	14.07.2024
34	Upper Indravati	600.00	1962	642.00	625.00	2300	1485.50	1213.14	637.11	27.09.2024	627.28	12.07.2024
35	Upper Kolab	320.00	832	858.00	844.00	1215	935.00	540	857.15	14.09.2024	849.16	14.07.2024
36	Rengali	250.00	525	123.50	109.72	3548	3167.81	275	123.84	28.09.2024	109.98	29.06.2024
	Sub-Total ER	**2142.25**	**6346.00**				**13866**					
NORTH EASTERN REGION												
37	Loktak	105	448	768.50	766.20	435.91	396.44	250	769.2	01.09.2024	766.61	30.04.2024
	Sub-Total NER	**105**	**448**				396.44					
	Total All India	**18232.35**	**53389.40**				**111834.35**					

Annex 3.2

S. No.	STATION	Inflows				Generation			
		10 years Average (MCM)	2023-24 (MCM)	2024-25 (MCM)	2024-25 Inflow as % of 2023-24 inflow	10 years Average (MU)	2023-24 (MU)	2024-25 (MU)	2024-25 generation as compared to 2023-24 (%)
1	2	3	4	5	6= (5/4*100)	7	8	9	10= (9/8*100)
Northern Region									
1	Bhakra	16853	17775	15673	88	5221	5749	5084	88
2	Pong	8790	12871	7659	60	1545	1807	1532	85
3	Ranjit Sagar	6833	90794	5360	6	1589	1843	1259	68
4	Chamera-I*	6115	6830	5330	78	2265	2170	2089	96
5	Tehri	7066	7263	7631	105	3159	3249	3374	104
6	Ram Ganga	498769	65502	21560	33	286	318	365	115
7	RP Sagar	5754	4536	4418	97	313	491	401	82
8	Rihand	5266	3727	6720	180	556	332	635	191
Sub Total (NR)		**555445**	**209297**	**74350**	**36**	**14934**	**15959**	**14739**	**92**
Western Region									
9	Ukai	10346	8182	15334	187	581	580	776	134
10	Sardar Sarovar	30461	31476	40265	128	2016	2510	3596	143
11	Gandhi Sagar	6046	5336	4313	81	259	295	276	93
12	Bansagar*		5375	6852	127	99	165	112	68
13	Pench*		1614	2201	136	314	367	443	121
14	Indira Sagar	25342	30006	33331	111	2517	3000	3631	121
15	Koyna	2344	3038	5035	166	2957	2425	2624	108
16	Bhira	1031	881	1316	150	1010	958	916	96
Sub Total (WR)		**75570**	**85907**	**108648**	**126**	**9752**	**10302**	**12374**	**120**
	Southern Region								
17	Srisailam	25542	3828	39585	1034	896.42	6	1167	19219
18	Upper Sileru*	2240	1726	2780	161	474	362	605	167
19	Lower Sileru*	3551	2847	4655	164	1062	1005	1227	122
20	N.J. Sagar	22055	4107	35504	865	1064	541	1923	356
21	Sharavathy	4508	6359	6638	104	4116	3358	4982	148
22	Supa DPH	2861	2304	4218	183	3187	2962	4491	152
23	Almatti	-	6411	24898	388	467	242	625	258
24	Varahi*	628	427	796	186	995	648	1161	179
25	Idukki	1787	1243	1733	139	2367	1645	2413	147
26	Sabarigiri	870	1367	813	59	1282	1130	1320	117
27	Madupetty	103	64	125	195	152	157	15	10
28	Idamalayar	1159	827	1249	151	292	198	340	171
29	Mettur	6956	2084	8165	392	527	228	480	211
30	Periyar	650	523	634	121	508	440	560	127
Sub Total (SR)		**72910**	**34116**	**131794**	**386**	**17391**	**12921**	**21309**	**165**
Eastern Region									
31	Machkund	1482	1376	1533	111	618	863	481	56
32	Hirakud	25672	31463	28769	91	894	1177	999	85
33	Balimela	4029	3716	4976	134	1278	1035	1668	161
34	Indravati	3428	9152	2652	29	1687	1726	1424	83
35	Upper Kolab	1384	1598	1389	87	704	581	809	139
36	Rengali	11071	14606	10958	75	774	780	905	116
Sub Total (ER)		**47065**	**61912**	**50278**	**81**	**5955**	**6162**	**6285**	**102**
North Eastern Region									
37	Loktak	2012	869	2767	318	564	298	706	237
Sub Total (NER)		**2012**	**869**	**2767**	**318**	**564**	**298**	**706**	**237**
Total (All India)		**753002**	**392102**	**367837**	**94**	**48597**	**45642**	**55413**	**121**

CHAPTER-4

PLANNED MAINTENANCE OF HE UNITS

CHAPTER-4

PLANNED MAINTENANCE OF H.E. UNITS

4.1 For the purpose of studies and analysis of performance in respect of availability of H.E. Stations, outage data of 741 generating units installed in 216 Hydro Electric Stations was made available by various organizations. The studies indicate that a total of 427600 hours were utilized for carrying out various types of planned maintenance works to facilitate healthy running of generating units. Details of long duration planned outages (50 hours and above) are given in **Annex-4.1**.

4.2 It is observed that capital maintenance was carried out for 157 generating units whereas annual maintenance was carried out for 127 generating units. Analysis of various types of planned maintenance indicates that while most of the planned outages were for periodic maintenance, many of these outages were for carrying out certain repairs/modification works also. Details of duration of periodic planned maintenance of generator, turbine, auxiliary equipments and civil structures etc. are indicated below in **Table 4.1**.

TABLE 4.1

DURATION OF PERIODIC PLANNED MAINTENANCE
PERIOD: 2024-25

S. NO	Type of Maintenance	No. of Units	Duration (Hours)	
			Max. for any unit	Average
1	ANNUAL MAINTENANCE	127	8760.00	823.69
2	AUXILIARY SYSTEM	7	397.48	61.77
3	BUTTERFLY VALVE	14	8760.00	700.94
4	CAPITAL/3 YEARLY MAINTENANCE	157	8760.00	575.37
5	DESILING CHAMBER	5	170.10	104.32
6	FIREBAY / RESERVOIR	1	783.65	783.65
7	GENERATOR	42	3254.40	122.63
8	GENERATOR TRANSFORMER	28	2206.00	253.81
9	HEAD RACE TUNNEL / HEAD RACE CHANNEL / POWER CHANNEL	7	5719.00	1094.13

10	INSPECTION /MTCE	2	21.00	10.85
11	MISCELLANEOUS	17	35.13	7.10
12	MONTHLY MAINTENANCE	33	2015.75	165.89
13	OTHER EQUIPMENT	14	234.13	36.95
14	OTHER PLANNED MAINTENANCE WORKS	58	734.50	139.82
15	PAINTING OTHERS	57	8760.00	1234.60
16	PLANNED MAINTENANCE	130	2939.43	336.41
17	PRESSURE SHAFT / PENSTOCK	12	225.52	118.82
18	REPAIR AND MAINTENANCE WORKS	2	840.00	8615.90
19	RENOVATION / MODERNISATION	15	8760.00	1422.71
20	ROUTINE MAINTENANCE	11	12.43	10.81
21	STATOR	3	1726.77	1131.25
22	SURGE SHAFT	2	126.00	79.47
23	SWITCHING EQUIPMENT	12	120.28	38.34
24	TESTING/CHECKING	5	1742.32	371.50
25	TAIL RACE TUNNEL /TAIL RACE CHANNEL /DRAFT TUBE	10	232.56	79.61
26	TURBINE	13	8760.00	836.85
27	TURBINE MISCELLANEOUS /GOVERNOR	48	3042.50	316.26

4.3 There were a total of 2456 outages due to Planned Maintenance during the Year 2024-25, out of which about 76.67% were of duration up to 24 hours, while 14.67% of the planned outages were of duration more than 10 days. Details giving duration pattern of planned maintenance is indicated in **Table 4.2** and illustrated in **Exhibit 4.1**. MISCLLANEOUS

TABLE 4.2

DURATION PATTERN OF PLANNED OUTAGE
PERIOD: 2024-25

Sl. No.	Duration	Number of Outage	Maintenance % to total number of Outages
1	Less than 6 hour	328	13.36
2	6 to 24 hours	1555	63.31
3	1 to 10 days	213	8.67
4	more than 10 days	360	14.66
	Total No. of Outages	**2456**	**100**

4.4 Planned Maintenance age-wise

Planned maintenance carried out for different age groups of hydro generating units during the year 2024-25 is indicated in **Table 4.3**.

TABLE 4.3

PLANNED MAINTENANCE AGE-WISE
PERIOD: 2024-25

Sl. No.	Year of Commissioning	No. of Units	Installed Capacity (MW)	Planned Outages (Hours)	Non-Availability Per Unit (Hours)
1	2024-25	10	799.99	696	70
2	2023-24	2	60	0	0
3	2022-23	2	120	0	0
4	2021-22	7	393	127	18
5	2020-21	8	510.00	0	0
6	2019-20	2	300.00	0	0
7	2018-19	3	140.00	0	0
8	2017-18	16	795.00	19	1
9	2016-17	18	1659.00	218	12
10	2015-16	17	1516.00	190	11

11	2010-11 to 2014-15	63	4437.02	61414	975
12	2005-06 to 2009-10	66	7077.00	53293	807
13	2000-01 to 2004-05	74	6741.80	38448	520
14	1989-90 to 1999-2000	86	5769.70	34464	401
15	1978-79 to 1988-89	124	7259.10	71448	576
16	1967-68 to 1977-78	81	5279.75	76872	949
17	Up to 1966-67	162	4724.85	119520	738
	Total	**741**	**47728.17**	**456709**	**616**

It is seen that the average non-availability of units due to planned maintenance is relatively higher in case of older units commissioned from 2010-11 to 2014-15 (975 hrs. /unit) and 1967-68 to 1977-78 (949 hrs. /unit) respectively.

4.5 Analysis based on Planned Maintenance of different types of Turbines

The details regarding non-availability of generating units due to planned maintenance for different types of turbines are indicated in **Table 4.4** given below.

TABLE 4.4

PLANNED MAINTENANCE-TURBINE TYPE-WISE
PERIOD: 2024-25

Sl. No.	Type of Turbine	No. of Units	Installed Capacity (MW)	Planned Outages (Hours)	Non-Availability Per Unit (Hours)
1	BULB	26	684.00	9674	372
2	FRANCIS	426	33126.21	247013	580
3	KAPLAN	133	4399.05	70522	530
4	PELTON	156	9518.90	100390	644
	Total	**741**	**47728.16**	**427600**	**577**

The average non-availability due to planned maintenance was maximum for Pelton turbine at 644 hrs. /unit followed by Francis units at 580 hrs. /unit, while it was minimum for Bulb units at 372 hrs. /unit.

4.6 Analysis based on Make of Generating Units

About 50.20% of the installed capacity of Hydro has been sourced from indigenous suppliers with BHEL alone accounting for about 41.84% of the capacity. The remaining 49.80 % has been imported from various countries like Japan, Canada, UK and France etc. The non-availability due to planned maintenance has been analyzed for generating units both indigenous and imported based on their make/supplier. The details are given below in **Table 4.5**:

TABLE 4.5
PLANNED MAINTENANCE-SUPPLIER-WISE
PERIOD: 2024-25

S. No	Name of Supplier/ Country of Make	No. of Units		Installed Capacity (MW)	Non-Availability		
		No.	% of total	MW	% of total	Total Hours	Hours/ Unit
A- Indigenous							
1	BHEL	318	41.84	20850.30	35.04	149838	471
2	OTHERS	54	11.61	3395.50	12.59	53850	997
	SUB TOTAL	**372**	**50.20**	**24245.80**	**47.64**	**202042**	**548**
B- Imported							
3	SWITZERLAND	21	2.83	797.85	7.20	30806	1467
4	CANADA	44	5.94	3132.00	2.62	11208	215
5	USA	9	1.21	351.00	1.42	6092	677
6	USSR	26	3.51	2804.00	6.02	25739	990
7	FRANCE	31	4.18	2179.20	0.83	3554	115
8	UNITED KINGDOM	63	8.50	1242.10	16.24	69421	1102
9	JAPAN	76	10.26	6416.20	7.30	31207	411
10	Others	99	13.36	6560.00	10.73	45885	463
	Sub Total	**369**	**49.80**	**23482.35**	**52.36**	**223912**	**607**
	Total	**741**	**100**	**47728.15**	**98**	**427600**	**577**

It is observed that during the year 2024-25, average non-availability due to planned maintenance of the units supplied by BHEL was 471 hrs. /unit.

Among the imported generating units, the average non-availability due to planned maintenance was the least for units supplied by France (115 hrs. /unit) and was maximum for units supplied by United Kingdom (1102 hrs. /unit).

4.7 Planned Maintenance – Region-wise

Region-wise non-availability of units due to planned maintenance in respect of various hydro power stations is indicated below in **Table 4.6**

TABLE 4.6

REGION-WISE PLANNED MAINTENANCE
PERIOD: 2024-25

S.No	Region	No. of Units	Installed Capacity (MW)	% Non-availability due to Planned Maintenance
1	Northern	266	20474.27	6.68
2	Western	101	7392.00	5.14
3	Southern	250	11847.15	5.90
4	Eastern	86	5987.75	8.91
5	North Eastern	38	2027.00	10.38
	All India	**741**	**47728.17**	**6.66**

The non-availability of generating unit due to planned maintenance was least in Western Region (5.14%) followed by Southern Region at 5.90%, whereas it was maximum in North Eastern Region (10.38 %) followed by Northern Region (6.68%).

The average non-availability of hydro electric units due to planned maintenance during the year 2024-25 was 6.66% as compared to 5.65% during the year 2023-24.

4.8 Planned Maintenance – Station-wise

The number of H.E. Stations falling under various ranges of non-availability due to planned maintenance during the year 2024-25 vis-à-vis 2023-24 is summarized below in **Table 4.7.**

TABLE 4.7

NON-AVAILABILITY OF HE STATIONS DUE TO PLANNED OUTAGES (2024-25 VIS-A-VIS 2023-24)

% Non-Availability due to planned maintenance	2024-25				2023-24			
	Stations		Capacity		Stations		Capacity	
	No.	% of Total	MW	% of Total	No.	% of Total	MW	% of Total
≤ 5	125	57.87	29875.97	62.60	125	58.96	29204.07	62.23
>5 to 10	51	23.61	11051.60	23.16	45	21.23	7524.10	16.03
>10 to 15	22	10.19	3591.85	7.53	22	10.38	6211.00	13.24
>15 to 20	6	2.78	2240.00	4.69	8	3.77	1679.00	3.58
>20 to 25	1	0.46	80.00	0.17	4	1.89	265.00	0.56
>25 to 30	1	0.46	132.00	0.28	4	1.89	1562.00	3.33
above 30	10	4.63	756.75	1.59	4	1.89	483.00	1.03
Total	**216**	**100**	**47728.17**	**100**	**212**	**100**	**46928.17**	**100**

It could be seen from above that 125 nos. (57.87% of total) hydro-electric stations had non-availability factor less than or equal to 5% due to planned maintenance during 2024-25 as compared to 125 nos. (58.96% of total) during 2023-24.

Non-availability due to planned maintenance was more than 30% at 10 nos. (4.63% of total) H.E. Stations during 2024-25 and which was 4 nos. (1.89% of total) in 2023-24. The details of these stations for 2024-25 is given below in **Table 4.8.**

TABLE 4.8
H.E. STATIONS HAVING HIGH PLANNED MAINTENANCE FOR THE PERIOD: (2024-25)

Sl. No	Name of Station/Utility	Capacity (MW)	N.A. due to P.M.* (%)	Reasons
1	CHIPLIMA HPS / OHPC	72.00	33.333	CAPITAL/3 YEARLY MTCE.
2	DHAKRANI HPS / UJVNL	33.75	31.941	RENOVATION/MODERNISATION
3	DIKCHU HPS / SKPPPL	96.00	72.002	PAINTING OTHERS
4	KHONDONG HPS / NEEPCO.	50.00	98.355	R AND M WORKS
4	KHOPOLI HPS / TATA MAH.	72.00	66.667	ANNUAL MAINTENANCE
6	KUTTIYADI HPS /	75.00	33.369	RENOVATION/MODERNISATION

	KSEB			
7	LIGANAMAKKI HPS / KPCL	55.00	50.00	TURBINE
8	SEWA-II HPS / NHPC	120.00	33.333	BUTTERFLY VALVE
9	SIVASAMUNDRUM HPS / KPCL	42.00	37.656	PAINTING OTHERS
10	UPPER SINDH-II HPS / JKSPDC	105.00	47.67	ANNUAL MAINTENANCE

*** N.A.** -Non availability, **P.M.-** Planned Maintenance

42.13% of stations had operational availability lower than 95% on account of planned maintenance alone against the normative design/plan annual availability of 95% total during the entire station life. These utilities need to improve their O&M practices to bring down their total outages i.e. planned & forced to less than 5% as per best practices.

It is observed from above that stations may be having high planned maintenance outages on account of ageing, O&M management issues, etc. Further, those stations which are having continuously high planned maintenance outages over past few years may be requiring major repair & maintenance works or Renovation & Modernisation (R&M) works for improving the availability, reliability & security of the plant besides providing life extension where the assets have outlived their useful life.

4.9 Planned Maintenance – Utility-wise/Sector-wise

Performance of hydro-electric units under various utilities in Central Sector, State Sector, and Private Sector with respect to non-availability due to planned maintenance is indicated in **Table 4.9**.

In case of Central Sector, non-availability due to planned maintenance was maximum under NEEPCO (1325 hrs. /unit).

In case of State Sector, non-availability due to planned maintenance was maximum under JKSPDC (1194 hrs. /unit).

In case of Private Sector, non-availability due to planned maintenance was maximum under SEPL (6307 hrs. /unit).

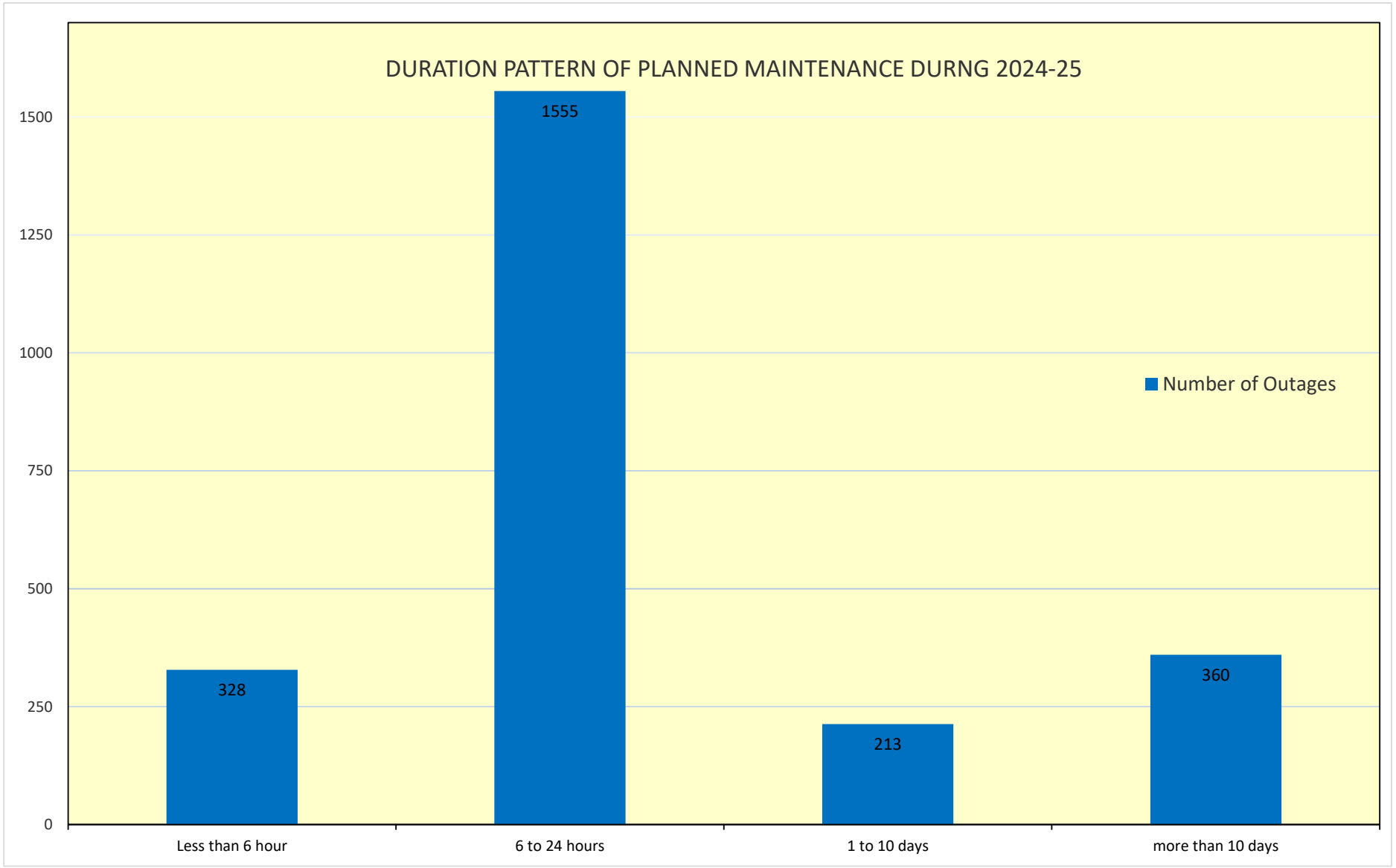
It is also observed that the average duration of planned maintenance in respect of H.E. Stations in Central Sector, State Sector and Private Sector is 723 hrs. /Unit, 489 hrs. /Unit and 942 hrs. /Unit respectively.

TABLE 4.9

SECTOR-WISE/ UTILITY-WISE PERFORMANCE PLANNED MAINTENANCE PERIOD: 2024-25

Sl. No.	Organization	No. of Units	Installed Capacity (MW)	Planned Maintenance (Hours)	Planned Maintenance per Unit (Hours)
(A)	**Central Sector**				
1	BBMB	28	2956.30	22380	799
2	DVC	5	143.20	2954	591
3	NEEPCO.	20	1500.00	26507	1325
4	NHDC	16	1520.00	5302	331
5	NHPC	73	6051.20	55020	754
6	NTPC Ltd.	4	800.00	345	86
7	SJVNL	14	1972.02	1630	116
8	THDC	8	1400.00	6003	750
Sub Total (CS)		**168**	**16342.72**	**120141**	**715**
(B)	**Private Sector**				
1	ADHPL	2	192.00	1134	567
2	AHPC (GVK)	4	330.00	587	147
3	DEPL	2	96.00	2100	1050
4	DLHP	1	34.00	0	0
5	E.P.P.L.	2	100.00	18	9
6	GBHPPL	2	70.00	657	329
7	GIPL	2	110.00	1109	554
8	GMR BHHPL	7	1345.00	1646	235
9	HBPCL	2	100.00	421	210
10	HSPCL	3	36.00	2286	762
11	IAEPL	4	400.00	206	51
12	JPPVL	3	99.00	2882	961
13	L&T	2	113.00	1698	849
14	MBPC	2	86.00	898	449
15	MPCL	2	97.00	450	225
16	SEPL	2	96.00	12615	6307
17	SKPPPL	15	447.00	26453	1764
18	TATA MAH.	7	1345.00	1646	235
Sub Total (Pvt.)		**60**	**3931.00**	**56518**	**942**
(C)	**State Sector**				
1	APGCL	2	100.00	549	275
2	APGENCO	34	1796.75	1863	55

3	BVPCL	3	99.99	0	0
4	CSPGCL	3	120.00	0	0
5	GSECL	8	540.00	0	0
6	HPPCL	8	406.00	1830	229
7	HPSEB	12	372.00	1515	126
8	JKSPDC	12	1110.00	20362	1697
9	JUUNL	2	130.00	1161	581
10	KPCL	66	3617.20	59265	898
11	KSEB	51	1964.15	36799	722
12	MAHAGENCO	24	2406.00	9205	384
13	MeECL	13	322.00	7067	544
14	MPPGCL	23	875.00	3705	161
15	OHPC	31	2039.80	25713	829
16	PSPCL	25	1051.00	5332	213
17	RRVUNL	11	411.00	1653	150
18	SSNNL	11	1450.00	781	71
19	TANGEDCO	69	2178.20	32059	465
20	TSGENCO	36	2405.60	0	0
21	TUL	6	1200.00	0	0
22	UJVNL	36	1372.15	36604	1017
23	UPJVNL	15	501.60	2618	175
24	WBSEDCL	12	986.00	2861	238
Sub Total (State)		**513**	**27454.44**	**250941**	**489**
All India		**741**	**47728.17**	**427600**	**577**


DURATION PATTERN OF PLANNED MAINTENANCE DURNG 2024-25
1500
1250
1000
750
500
250
0
1555
328
213
360
Number of Outages
Less than 6 hour
6 to 24 hours
1 to 10 days
more than 10 days

CENTRAL ELECTRICITY AUTHORITY
Hydro WING
Hydro Project Planning & Investigation Division

Annex-4.1

DETAILS OF LONG DURATION PLANNED OUTAGES IN HYDRO - ELECTRIC UNITS DURING 2024-25

(OUTAGE DURATION 50 HOURS AND ABOVE)

S.No	STATION	UNIT	CAPACITY(MW)	DATE OF OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
Eastern							
OHPC							
1	BALIMELA HPS	1	60.0	08/12/2024	08/29/2024	407.70	ANNUAL MAINTENANCE
		2	60.0	10/01/2024	10/06/2024	132.25	MISC.PAINTING WORKS/OTHER
		3	60.0	09/01/2024	09/04/2024	90.25	MISC.PAINTING WORKS/OTHER
		3	60.0	01/01/2025	01/31/2025	743.93	MISC.PAINTING WORKS/OTHER
		3	60.0	02/01/2025	02/04/2025	85.50	MISC.PAINTING WORKS/OTHER
		3	60.0	08/26/2024	08/31/2024	135.00	MISC.PAINTING WORKS/OTHER
		3	60.0	03/20/2025	03/24/2025	95.83	MISC.PAINTING WORKS/OTHER
		3	60.0	12/26/2024	12/31/2024	136.00	MISC.PAINTING WORKS/OTHER
		3	60.0	04/01/2024	04/10/2024	234.00	R AND M WORKS
		4	60.0	11/25/2024	11/29/2024	99.20	MONTHLY MAINTENANCE
		5	60.0	02/01/2025	02/28/2025	672.00	R AND M WORKS
		5	60.0	03/01/2025	03/31/2025	744.00	R AND M WORKS
		6	60.0	01/16/2025	01/31/2025	375.93	R AND M WORKS
		6	60.0	02/01/2025	02/28/2025	671.93	R AND M WORKS
		6	60.0	03/01/2025	03/31/2025	743.93	R AND M WORKS
		7	75.0	01/16/2025	01/31/2025	376.00	MONTHLY MAINTENANCE
		7	75.0	03/24/2025	03/26/2025	60.50	MONTHLY MAINTENANCE
		8	75.0	03/27/2025	03/29/2025	56.83	MONTHLY MAINTENANCE
2	CHIPLIMA HPS	1	24.0	04/01/2024	03/31/2025	8,760.00	CAPITAL MAINTENANCE
		2	24.0	06/03/2024	06/10/2024	177.17	MISC.PAINTING WORKS/OTHER
		2	24.0	11/13/2024	12/24/2024	1,006.83	MONTHLY MAINTENANCE
		3	24.0	11/13/2024	11/30/2024	432.00	ANNUAL MAINTENANCE
GIPL							
3	CHUZACHEN HPS	2	55.0	02/06/2025	03/21/2025	1,040.83	ANNUAL MAINTENANCE
SKPPPL							
4	DIKCHU HPS	1	48.0	04/01/2024	12/06/2024	5,984.15	MISC.PAINTING WORKS/OTHER
		1	48.0	01/20/2025	03/24/2025	1,518.57	MISC.PAINTING WORKS/OTHER
		2	48.0	04/01/2024	10/31/2024	5,112.00	MISC.PAINTING WORKS/OTHER
OHPC							

S.No	STATION	UNIT	CAPACITY(MW)	DATE OF OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
5	HIRAKUD HPS	1	49.5	11/10/2024	11/29/2024	468.17	ANNUAL MAINTENANCE
		1	49.5	05/01/2024	05/22/2024	514.42	ANNUAL MAINTENANCE
		1	49.5	04/18/2024	04/30/2024	296.50	ANNUAL MAINTENANCE
		2	49.5	12/01/2024	01/31/2025	1,479.90	ANNUAL MAINTENANCE
		2	49.5	11/10/2024	11/30/2024	504.00	ANNUAL MAINTENANCE
		3	32.0	11/10/2024	11/29/2024	468.17	MISC.PAINTING WORKS/OTHER
		3	32.0	02/05/2025	02/18/2025	318.75	ANNUAL MAINTENANCE
		4	32.0	11/10/2024	11/29/2024	468.17	MONTHLY MAINTENANCE
		4	32.0	03/01/2025	03/21/2025	498.25	ANNUAL MAINTENANCE
		6	43.65	11/10/2024	11/29/2024	468.17	MISC.PAINTING WORKS/OTHER
		7	37.5	11/10/2024	11/29/2024	468.17	CAPITAL MAINTENANCE
DEPL							
6	JORETHANG LOOP	1	48.0	04/01/2024	04/22/2024	504.00	DAM RESIDUAL WORKS
		2	48.0	04/01/2024	04/22/2024	504.00	DAM RESIDUAL WORKS
		2	48.0	03/11/2025	03/21/2025	261.55	ANNUAL MAINTENANCE
		2	48.0	12/03/2024	01/06/2025	830.27	ANNUAL MAINTENANCE
APGENCO							
7	MACHKUND HPS	3	17.0	06/01/2024	08/09/2024	1,673.17	MISC.PAINTING WORKS/OTHER
		3	17.0	09/09/2024	09/13/2024	108.58	MISC.PAINTING WORKS/OTHER
		3	17.0	01/22/2025	01/25/2025	79.25	MISC.PAINTING WORKS/OTHER
DVC							
8	MAITHON HPS	1	20.0	12/12/2024	01/03/2025	523.78	ANNUAL MAINTENANCE
		2	23.2	06/15/2024	06/18/2024	64.46	GOVERNOR SYSTEM
		2	23.2	04/01/2024	06/14/2024	1,793.70	GOVERNOR SYSTEM
		2	23.2	12/03/2024	12/11/2024	198.15	ANNUAL MAINTENANCE
		3	20.0	01/21/2025	02/04/2025	333.57	ANNUAL MAINTENANCE
WBSEDCL							
9	PURULIA PSS HPS	2	225.0	09/01/2024	09/03/2024	55.00	ANNUAL MAINTENANCE
		3	225.0	11/04/2024	02/05/2025	2,242.50	OVERHAULING WORKS
		4	225.0	03/14/2025	03/17/2025	80.67	ANNUAL MAINTENANCE
		4	225.0	08/28/2024	08/31/2024	81.75	ANNUAL MAINTENANCE
10	RAMMAM HPS	2	12.5	02/04/2025	02/20/2025	388.59	ANNUAL MAINTENANCE
NHPC							
11	RANGIT HPS	1	20.0	12/25/2024	12/27/2024	62.22	BUTTERFLY VALVE
		1	20.0	04/01/2024	04/08/2024	189.05	CAPITAL MAINTENANCE
		2	20.0	04/01/2024	05/08/2024	903.78	ANNUAL MAINTENANCE
		2	20.0	12/25/2024	12/27/2024	62.07	BUTTERFLY VALVE
		3	20.0	12/25/2024	03/05/2025	1,692.87	CAPITAL MAINTENANCE
OHPC							

S.No	STATION	UNIT	CAPACITY(MW)	DATE OF OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
12	RENGALI HPS	3	50.0	01/01/2025	01/30/2025	703.25	ANNUAL MAINTENANCE
		4	50.0	02/10/2025	03/20/2025	923.42	ANNUAL MAINTENANCE
MBPC							
13	RONGNICHU HPS	1	56.5	02/14/2025	03/21/2025	820.99	ANNUAL MAINTENANCE
		2	56.5	02/14/2025	03/21/2025	826.76	ANNUAL MAINTENANCE
JUUNL							
14	SUBERNREKHA-I HPS	1	65.0	07/25/2024	08/18/2024	580.57	ANNUAL MAINTENANCE
15	SUBERNREKHA-II HPS	2	65.0	07/25/2024	08/18/2024	580.57	ANNUAL MAINTENANCE
SEPL							
16	TASHIDING HPS	1	48.5	03/24/2025	03/30/2025	167.92	MISC.PAINTING WORKS/OTHER
		2	48.5	03/24/2025	03/30/2025	167.92	MISC.PAINTING WORKS/OTHER
NHPC							
17	TEESTA LOW DAM-III	1	33.0	02/19/2025	03/12/2025	506.68	ANNUAL MAINTENANCE
		1	33.0	08/02/2024	10/14/2024	1,742.32	TESTING/CHECKING
		1	33.0	10/15/2024	10/18/2024	72.55	INSPECTION /MTCE
		2	33.0	05/10/2024	05/24/2024	354.37	TURBINE INSPECTION MISC
		2	33.0	09/05/2024	09/09/2024	94.20	T.R.T/ T.R.C.
		2	33.0	12/27/2024	01/22/2025	635.57	ANNUAL MAINTENANCE
		2	33.0	08/09/2024	08/15/2024	144.97	TURBINE INSPECTION MISC
		3	33.0	09/26/2024	10/05/2024	228.30	TURBINE INSPECTION MISC
		3	33.0	09/14/2024	09/26/2024	288.95	TURBINE INSPECTION MISC
		3	33.0	04/04/2024	04/16/2024	290.75	ANNUAL MAINTENANCE
		3	33.0	08/02/2024	09/04/2024	784.40	TURBINE INSPECTION MISC
		3	33.0	09/05/2024	09/13/2024	196.87	TURBINE INSPECTION MISC
		4	33.0	12/10/2024	12/18/2024	183.15	TURBINE INSPECTION MISC
		4	33.0	04/01/2024	04/05/2024	113.42	ANNUAL MAINTENANCE
		4	33.0	12/18/2024	12/22/2024	90.98	TURBINE INSPECTION MISC
		4	33.0	09/26/2024	12/10/2024	1,802.02	TURBINE INSPECTION MISC
		4	33.0	04/29/2024	05/02/2024	74.52	DAM/SPILL GATES
		4	33.0	08/04/2024	09/26/2024	1,272.52	TURBINE INSPECTION MISC
		4	33.0	01/27/2025	02/14/2025	438.72	ANNUAL MAINTENANCE
18	TEESTA LOW DAM-IV	1	40.0	01/14/2025	02/04/2025	519.00	ANNUAL MAINTENANCE
		2	40.0	04/01/2024	04/18/2024	420.07	ANNUAL MAINTENANCE
		3	40.0	12/18/2024	01/10/2025	554.52	ANNUAL MAINTENANCE
		4	40.0	02/09/2025	03/06/2025	596.70	ANNUAL MAINTENANCE
OHPC							
19	UPPER KOLAB HPS	1	80.0	01/08/2025	03/17/2025	1,645.30	CAPITAL MAINTENANCE
North Eastern							
NEEPCO.							

S.No	STATION	UNIT	CAPACITY(MW)	DATE OF OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
20	KAMENG HPS	4	150.0	04/26/2024	05/10/2024	360.00	ANNUAL MAINTENANCE
APGCL							
21	KARBI LANGPI HPS	1	50.0	05/15/2024	05/17/2024	56.63	MISC. SHORT DURATION
		2	50.0	04/01/2024	04/21/2024	492.85	SCHEDULED CAPITAL
NEEPCO.							
22	KHONDONG HPS	1	25.0	05/06/2024	05/10/2024	120.00	R AND M / REFURBISHMENT
		1	25.0	07/01/2024	07/05/2024	120.00	R AND M / REFURBISHMENT
		1	25.0	04/01/2024	05/05/2024	840.00	R AND M / REFURBISHMENT
		2	25.0	04/01/2024	05/05/2024	840.00	R AND M / REFURBISHMENT
		2	25.0	06/30/2024	07/05/2024	144.00	R AND M / REFURBISHMENT
		2	25.0	05/06/2024	05/10/2024	120.00	R AND M / REFURBISHMENT
23	KOPILI HPS	3	50.0	01/02/2025	01/10/2025	216.00	ANNUAL MAINTENANCE
MeECL							
24	KYRDEMKULAI HPS	2	30.0	02/08/2025	02/11/2025	90.50	GENERATOR
NHPC							
25	LOKTAK HPS	1	35.0	03/03/2025	03/07/2025	96.00	ANNUAL MAINTENANCE
		2	35.0	02/23/2025	02/28/2025	120.00	ANNUAL MAINTENANCE
		3	35.0	02/10/2025	02/14/2025	120.00	ANNUAL MAINTENANCE
MeECL							
26	MYNTDU(LESHKA) St-1	1	42.0	04/01/2024	06/07/2024	1,619.75	ANNUAL MAINTENANCE
		2	42.0	12/09/2024	02/07/2025	1,459.50	MONTHLY MAINTENANCE
		3	42.0	11/13/2024	12/09/2024	640.50	MONTHLY MAINTENANCE
		3	42.0	02/08/2025	02/14/2025	154.00	ANNUAL MAINTENANCE
27	NEW UMTRU HPS	1	20.0	02/10/2025	03/11/2025	715.00	ANNUAL MAINTENANCE
		2	20.0	01/08/2025	02/04/2025	666.35	ANNUAL MAINTENANCE
NEEPCO.							
28	RANGANADI HPS	1	135.0	01/13/2025	01/17/2025	120.00	MISCELLANEOUS PLANNED
		1	135.0	01/07/2025	01/10/2025	88.00	ANNUAL MAINTENANCE
		2	135.0	01/13/2025	01/17/2025	120.00	MISCELLANEOUS PLANNED
		2	135.0	01/07/2025	01/10/2025	88.00	ANNUAL MAINTENANCE
		3	135.0	01/13/2025	01/17/2025	120.00	MISCELLANEOUS PLANNED
		3	135.0	01/07/2025	01/10/2025	88.00	ANNUAL MAINTENANCE
MeECL							
29	UMIAM HPS ST-I	1	9.0	05/24/2024	06/04/2024	278.00	GENERATOR TRANSFORMER
		1	9.0	03/18/2025	03/21/2025	95.97	GENERATOR
		1	9.0	10/18/2024	10/21/2024	90.50	SWITCHING EQUIPMENT
		1	9.0	11/29/2024	12/02/2024	92.00	GENERATOR TRANSFORMER
		3	9.0	03/22/2025	03/26/2025	113.00	GENERATOR
		3	9.0	10/15/2024	10/18/2024	90.50	SWITCHING EQUIPMENT

S.No	STATION	UNIT	CAPACITY(MW)	DATE OF OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
		4	9.0	10/15/2024	10/18/2024	90.50	SWITCHING EQUIPMENT
		4	9.0	03/12/2025	03/17/2025	126.00	SURGE SHAFT TRT MTc.
30	UMIAM HPS ST-IV	7	30.0	11/18/2024	12/02/2024	353.50	POWER CHANNEL WORKS
		8	30.0	11/18/2024	11/29/2024	282.50	POWER CHANNEL WORKS
Northern							
ADHPL							
31	ALLAIN DUHANGAN	1	96.0	01/02/2025	01/23/2025	514.05	ANNUAL MAINTENANCE
		2	96.0	12/02/2024	12/24/2024	537.55	ANNUAL MAINTENANCE
NHPC							
32	BAIRA SIUL HPS	1	60.0	01/09/2025	02/12/2025	811.35	ANNUAL MAINTENANCE
		1	60.0	04/15/2024	04/22/2024	170.10	DESILING CHANMBER
		2	60.0	12/14/2024	01/09/2025	636.65	ANNUAL MAINTENANCE
		2	60.0	04/15/2024	04/22/2024	168.57	DESILING CHANMBER
		3	60.0	11/15/2024	12/13/2024	681.22	ANNUAL MAINTENANCE
		3	60.0	04/15/2024	04/22/2024	168.83	DESILING CHANMBER
GMR BHHPL							
33	BAJOLI HOLI HPS	1	60.0	10/22/2024	12/17/2024	1,358.37	ANNUAL MAINTENANCE
HBPCL							
34	BASPA HPS	1	100.0	01/07/2025	01/17/2025	240.50	ANNUAL MAINTENANCE
		1	100.0	04/12/2024	04/15/2024	66.00	RENOVATION/MODERNISATION
		2	100.0	01/28/2025	02/06/2025	235.25	ANNUAL MAINTENANCE
		3	100.0	02/28/2025	03/08/2025	198.00	ANNUAL MAINTENANCE
HPSEB							
35	BASSI HPS	2	16.5	11/28/2024	12/27/2024	705.26	ANNUAL MAINTENANCE
BBMB							
36	BHAKRA LEFT HPS	1	126.0	12/30/2024	01/01/2025	53.25	ANNUAL MAINTENANCE
		1	126.0	01/28/2025	02/20/2025	558.77	ANNUAL MAINTENANCE
		3	126.0	04/01/2024	04/20/2024	454.17	ANNUAL MAINTENANCE
		3	126.0	11/11/2024	02/21/2025	2,453.75	ANNUAL MAINTENANCE
		4	126.0	02/21/2025	03/31/2025	925.75	ANNUAL MAINTENANCE
		4	126.0	04/01/2024	08/14/2024	3,254.40	GENERATOR
		5	126.0	01/01/2025	01/24/2025	551.00	ANNUAL MAINTENANCE
37	BHAKRA RIGHT HPS	10	157.0	04/01/2024	11/08/2024	5,311.63	ANNUAL MAINTENANCE
		10	157.0	11/09/2024	11/14/2024	116.01	CAPITAL MAINTENANCE
		6	157.0	01/10/2025	01/17/2025	173.50	ANNUAL MAINTENANCE
		7	157.0	12/11/2024	12/27/2024	386.72	ANNUAL MAINTENANCE
		8	157.0	01/20/2025	02/13/2025	579.50	ANNUAL MAINTENANCE
		9	157.0	02/14/2025	03/11/2025	605.37	ANNUAL MAINTENANCE
		9	157.0	12/13/2024	01/22/2025	961.10	CAPITAL MAINTENANCE

S.No	STATION	UNIT	CAPACITY(MW)	DATE OF OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
GBHPPL							
38	BUDHIL HPS	1	35.0	12/02/2024	12/29/2024	657.37	ANNUAL MAINTENANCE
NHPC							
39	CHAMERA-I HPS	1	180.0	01/06/2025	01/28/2025	535.42	ANNUAL MAINTENANCE
		2	180.0	01/31/2025	02/14/2025	343.62	ANNUAL MAINTENANCE
		3	180.0	12/16/2024	01/03/2025	429.77	ANNUAL MAINTENANCE
40	CHAMERA-II HPS	2	100.0	12/06/2024	12/20/2024	349.38	ANNUAL MAINTENANCE
		3	100.0	11/20/2024	12/03/2024	304.13	ANNUAL MAINTENANCE
41	CHAMERA-III HPS	1	77.0	12/26/2024	01/09/2025	337.02	ANNUAL MAINTENANCE
IAEPL							
42	CHANJU-I HPS	1	12.0	11/06/2024	12/06/2024	722.18	ANNUAL MAINTENANCE
		2	12.0	12/07/2024	01/05/2025	713.08	ANNUAL MAINTENANCE
		3	12.0	10/01/2024	11/05/2024	850.75	ANNUAL MAINTENANCE
UJVNL							
43	CHIBRO (YAMUNA)	1	60.0	12/06/2024	01/16/2025	999.77	ANNUAL MAINTENANCE
		2	60.0	04/30/2024	05/20/2024	474.92	ANNUAL MAINTENANCE
		2	60.0	01/17/2025	03/30/2025	1,741.58	ANNUAL MAINTENANCE
		3	60.0	06/01/2024	06/13/2024	301.25	ANNUAL MAINTENANCE
		4	60.0	04/01/2024	04/23/2024	551.92	ANNUAL MAINTENANCE
		4	60.0	01/01/2025	02/16/2025	1,120.58	ANNUAL MAINTENANCE
		4	60.0	12/22/2024	12/31/2024	239.83	ANNUAL MAINTENANCE
44	CHILLA HPS	1	36.0	05/24/2024	06/10/2024	427.22	POWER CHANNEL WORKS
		1	36.0	12/05/2024	12/27/2024	530.52	ANNUAL MAINTENANCE
		2	36.0	11/06/2024	11/27/2024	513.58	ANNUAL MAINTENANCE
		2	36.0	05/24/2024	06/10/2024	426.20	POWER CHANNEL WORKS
		3	36.0	04/01/2024	06/26/2024	2,064.08	CAPITAL MAINTENANCE
		3	36.0	01/09/2025	02/03/2025	598.17	ANNUAL MAINTENANCE
		4	36.0	05/24/2024	06/11/2024	448.83	POWER CHANNEL WORKS
NHPC							
45	CHUTAK HPS	1	11.0	12/18/2024	12/30/2024	307.33	INSPECTION /MTCE
		2	11.0	11/18/2024	12/13/2024	607.48	ANNUAL MAINTENANCE
		3	11.0	01/17/2025	02/05/2025	463.03	ANNUAL MAINTENANCE
		4	11.0	01/03/2025	01/17/2025	337.50	ANNUAL MAINTENANCE
BBMB							
46	DEHAR HPS	2	165.0	04/01/2024	06/23/2024	1,992.00	CAPITAL MAINTENANCE
		5	165.0	02/03/2025	03/06/2025	752.17	ANNUAL MAINTENANCE
		6	165.0	02/14/2025	03/12/2025	625.92	ANNUAL MAINTENANCE
UJVNL							
47	DHAKRANI HPS	1	11.25	04/01/2024	03/16/2025	8,394.08	RENOVATION/MODERNISATION

S.No	STATION	UNIT	CAPACITY(MW)	DATE OF OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
		3	11.25	02/27/2025	03/17/2025	432.00	ANNUAL MAINTENANCE
48	DHALIPUR HPS	1	17.0	12/06/2024	12/27/2024	511.17	ANNUAL MAINTENANCE
		1	17.0	04/01/2024	04/15/2024	359.47	ANNUAL MAINTENANCE
		2	17.0	06/27/2024	07/07/2024	234.13	GENERATOR TRANSFORMER
		3	17.0	01/03/2025	03/11/2025	1,609.38	RENOVATION/MODERNISATION
		3	17.0	05/07/2024	05/17/2024	250.72	RENOVATION/MODERNISATION
NHPC							
49	DHAULI GANGA HPS	1	70.0	01/21/2025	02/07/2025	422.70	ANNUAL MAINTENANCE
		2	70.0	12/30/2024	01/17/2025	447.00	ANNUAL MAINTENANCE
		3	70.0	03/02/2025	03/24/2025	539.67	ANNUAL MAINTENANCE
		4	70.0	02/10/2025	02/28/2025	440.85	ANNUAL MAINTENANCE
50	DULHASTI HPS	1	130.0	01/12/2025	02/04/2025	566.28	ANNUAL MAINTENANCE
		2	130.0	11/28/2024	12/10/2024	292.55	TURBINE INSPECTION MISC
		2	130.0	02/07/2025	02/25/2025	435.80	ANNUAL MAINTENANCE
		3	130.0	12/18/2024	01/09/2025	518.30	ANNUAL MAINTENANCE
		3	130.0	04/01/2024	04/03/2024	64.50	MISCELLANEOUS PLANNED
BBMB							
51	GANGUWAL HPS	2	24.2	04/01/2024	04/21/2024	504.00	HALF YEARLY MAINTENANCE
		3	24.2	04/03/2024	04/09/2024	142.15	HALF YEARLY MAINTENANCE
HPSEB							
52	GIRI BATA HPS	2	30.0	04/29/2024	05/31/2024	776.62	ANNUAL MAINTENANCE
HBPCL							
53	KARCHAM WANGTOO	1	261.25	02/14/2025	02/25/2025	279.65	ANNUAL MAINTENANCE
		3	261.25	04/01/2024	04/10/2024	231.18	ANNUAL MAINTENANCE
		3	261.25	12/17/2024	01/02/2025	395.27	ANNUAL MAINTENANCE
HPPCL							
54	KASHANG	2	65.0	02/07/2025	02/21/2025	353.33	ANNUAL MAINTENANCE
		3	65.0	12/12/2024	02/07/2025	1,378.81	ANNUAL MAINTENANCE
UJVNL							
55	KHATIMA HPS	1	13.8	11/15/2024	12/18/2024	803.08	ANNUAL MAINTENANCE
		2	13.8	02/17/2025	03/06/2025	419.08	ANNUAL MAINTENANCE
		3	13.8	12/23/2024	01/19/2025	656.32	ANNUAL MAINTENANCE
56	KHODRI HPS	1	30.0	12/19/2024	03/20/2025	2,178.22	ANNUAL MAINTENANCE
NHPC							
57	KISHANGANGA HPS	1	110.0	04/07/2024	05/29/2024	1,255.04	STATOR REWINDING
		1	110.0	12/16/2024	01/14/2025	702.31	ANNUAL MAINTENANCE
		2	110.0	02/08/2025	03/13/2025	805.00	ANNUAL MAINTENANCE
		3	110.0	01/18/2025	02/03/2025	392.89	ANNUAL MAINTENANCE
NTPC Ltd.							

S.No	STATION	UNIT	CAPACITY(MW)	DATE OF OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
58	KOLDAM	3	200.0	09/11/2024	11/08/2024	1,389.98	OVERHAULING WORKS
		4	200.0	02/26/2025	03/07/2025	224.97	OVERHAULING WORKS
THDC							
59	KOTESHWAR HPS	1	100.0	04/17/2024	07/09/2024	2,001.50	ANNUAL MAINTENANCE
		2	100.0	06/02/2024	07/09/2024	893.00	ANNUAL MAINTENANCE
		3	100.0	06/09/2024	07/09/2024	725.00	ANNUAL MAINTENANCE
BBMB							
60	KOTLA HPS	1	29.25	04/01/2024	04/21/2024	504.00	HALF YEARLY MAINTENANCE
UJVNL							
61	KULHAL HPS	1	10.0	12/01/2024	12/30/2024	717.58	MISC.PAINTING WORKS/OTHER
		1	10.0	05/01/2024	05/23/2024	546.92	MISC.PAINTING WORKS/OTHER
		2	10.0	01/03/2025	01/31/2025	687.83	ANNUAL MAINTENANCE
		2	10.0	04/05/2024	04/30/2024	623.92	ANNUAL MAINTENANCE
MPCL							
62	MALANA HPS	1	43.0	12/06/2024	12/19/2024	321.12	ANNUAL MAINTENANCE
		2	43.0	01/21/2025	02/14/2025	576.68	ANNUAL MAINTENANCE
UJVNL							
63	MANERI BHALI-I HPS	2	30.0	12/10/2024	01/12/2025	804.48	ANNUAL MAINTENANCE
		3	30.0	01/15/2025	02/16/2025	775.03	ANNUAL MAINTENANCE
64	MANERI BHALI-II HPS	1	76.0	10/16/2024	12/12/2024	1,381.85	ANNUAL MAINTENANCE
		2	76.0	12/03/2024	01/24/2025	1,257.03	ANNUAL MAINTENANCE
		4	76.0	01/28/2025	03/17/2025	1,153.94	ANNUAL MAINTENANCE
UPJVNL							
65	MATATILA HPS	3	10.2	04/01/2024	05/01/2024	739.00	CAPITAL MAINTENANCE
SJVNL							
66	NATHPA JHAKRI HPS	1	250.0	01/08/2025	01/17/2025	210.47	ANNUAL MAINTENANCE
		4	250.0	01/18/2025	01/24/2025	151.37	ANNUAL MAINTENANCE
		6	250.0	02/12/2025	02/21/2025	231.85	ANNUAL MAINTENANCE
NHPC							
67	NIMMO BAZGO HPS	1	15.0	12/03/2024	01/21/2025	1,194.65	ANNUAL MAINTENANCE
		2	15.0	02/27/2025	03/17/2025	429.72	ANNUAL MAINTENANCE
68	PARBATI-III HPS	1	130.0	11/29/2024	01/21/2025	1,270.07	ANNUAL MAINTENANCE
		1	130.0	04/01/2024	04/06/2024	138.13	GENERATOR
		1	130.0	07/30/2024	08/02/2024	74.03	TURBINE INSPECTION MISC
		2	130.0	05/14/2024	05/28/2024	340.02	MISCELLANEOUS PLANNED
		2	130.0	08/05/2024	08/07/2024	54.18	TURBINE INSPECTION MISC
		3	130.0	04/01/2024	04/29/2024	691.05	ANNUAL MAINTENANCE
		3	130.0	08/16/2024	08/22/2024	150.90	TURBINE INSPECTION MISC
		4	130.0	01/06/2025	01/08/2025	53.98	GENERATOR
BBMB							

S.No	STATION	UNIT	CAPACITY(MW)	DATE OF OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
69	PONG HPS	1	66.0	10/24/2024	11/08/2024	372.27	ANNUAL MAINTENANCE
		2	66.0	11/21/2024	12/02/2024	262.50	ANNUAL MAINTENANCE
		4	66.0	12/17/2024	12/27/2024	242.50	ANNUAL MAINTENANCE
		5	66.0	12/28/2024	01/08/2025	271.27	ANNUAL MAINTENANCE
		6	66.0	11/08/2024	11/20/2024	288.10	ANNUAL MAINTENANCE
SJVNL							
70	RAMPUR HPS	3	68.67	02/12/2025	02/19/2025	180.83	ANNUAL MAINTENANCE
		4	68.67	01/29/2025	02/04/2025	168.00	ANNUAL MAINTENANCE
		5	68.67	01/09/2025	01/17/2025	216.00	ANNUAL MAINTENANCE
		6	68.67	01/19/2025	01/27/2025	203.75	ANNUAL MAINTENANCE
		6	68.67	01/15/2025	01/17/2025	60.00	BUTTERFLY VALVE
PSPCL							
71	RANJIT SAGAR HPS	1	150.0	01/13/2025	02/14/2025	777.00	ANNUAL MAINTENANCE
		1	150.0	10/23/2024	10/30/2024	173.75	DRAFT TUBE
		2	150.0	10/15/2024	10/23/2024	190.67	DRAFT TUBE
		2	150.0	11/13/2024	12/12/2024	693.75	ANNUAL MAINTENANCE
		4	150.0	12/13/2024	01/10/2025	668.75	ANNUAL MAINTENANCE
UPJVNL							
72	RIHAND HPS	3	50.0	04/01/2024	05/15/2024	1,077.75	EXTENDED ANNUAL
		4	50.0	11/25/2024	12/25/2024	727.83	ANNUAL MAINTENANCE
		5	50.0	09/23/2024	09/26/2024	64.17	MISCELLANEOUS PLANNED
RRVUNL							
73	R P SAGAR HPS	1	43.0	04/08/2024	05/03/2024	607.00	ANNUAL MAINTENANCE
		3	43.0	05/29/2024	06/20/2024	535.45	ANNUAL MAINTENANCE
		4	43.0	05/07/2024	05/28/2024	510.40	ANNUAL MAINTENANCE
HPPCL							
74	SAINJ HPS	2	50.0	07/28/2024	07/30/2024	61.77	GOVERNOR SYSTEM
NHPC							
75	SALAL HPS	1	115.0	12/16/2024	01/03/2025	439.35	ANNUAL MAINTENANCE
		3	115.0	01/04/2025	01/28/2025	578.15	ANNUAL MAINTENANCE
		4	115.0	11/27/2024	12/14/2024	416.23	ANNUAL MAINTENANCE
		5	115.0	11/11/2024	11/26/2024	370.12	ANNUAL MAINTENANCE
		6	115.0	01/29/2025	02/18/2025	489.25	ANNUAL MAINTENANCE
76	SEWA-II HPS	1	40.0	12/05/2024	12/17/2024	288.03	ANNUAL MAINTENANCE
		1	40.0	04/01/2024	03/31/2025	8,760.00	PENSTOCK B.F.VALVE PROBLEM
		2	40.0	11/18/2024	12/05/2024	413.60	ANNUAL MAINTENANCE
		3	40.0	11/01/2024	11/14/2024	325.00	ANNUAL MAINTENANCE
PSPCL							
77	SHANAN HPS	1	15.0	01/07/2025	02/10/2025	819.42	RENOVATION/MODERNISATION

S.No	STATION	UNIT	CAPACITY(MW)	DATE OF OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
		1	15.0	10/04/2024	10/25/2024	510.98	ANNUAL MAINTENANCE
		2	15.0	01/16/2025	02/09/2025	579.25	ANNUAL MAINTENANCE
		3	15.0	02/10/2025	02/28/2025	444.92	ANNUAL MAINTENANCE
		4	15.0	03/19/2025	03/26/2025	174.42	ANNUAL MAINTENANCE
		4	15.0	03/04/2025	03/07/2025	82.33	RENOVATION/MODERNISATION
AHPC (GVK)							
78	SHRINAGAR HPS	1	82.5	02/07/2025	02/13/2025	147.00	ANNUAL MAINTENANCE
		2	82.5	10/18/2024	10/24/2024	144.00	ANNUAL MAINTENANCE
		3	82.5	02/14/2025	02/20/2025	150.00	ANNUAL MAINTENANCE
		4	82.5	12/14/2024	12/20/2024	146.00	ANNUAL MAINTENANCE
L&T							
79	SINGOLI BHATWARI	1	33.0	11/12/2024	12/25/2024	1,047.73	ANNUAL MAINTENANCE
		2	33.0	02/13/2025	03/26/2025	991.27	ANNUAL MAINTENANCE
		3	33.0	01/02/2025	02/06/2025	843.28	ANNUAL MAINTENANCE
HSPCL							
80	SORANG HPS	1	50.0	02/17/2025	02/28/2025	257.00	ANNUAL MAINTENANCE
		1	50.0	03/01/2025	03/07/2025	164.00	ANNUAL MAINTENANCE
NHPC							
81	TANAKPUR HPS	1	31.4	11/29/2024	01/14/2025	1,094.47	ANNUAL MAINTENANCE
		1	31.4	08/29/2024	09/01/2024	80.93	TURBINE INSPECTION MISC
		1	31.4	08/26/2024	08/28/2024	51.12	TURBINE INSPECTION MISC
		2	31.4	01/14/2025	02/19/2025	877.02	ANNUAL MAINTENANCE
		3	31.4	04/01/2024	04/03/2024	63.00	ANNUAL MAINTENANCE
THDC							
82	TEHRI ST-1 HPS	1	250.0	06/07/2024	07/10/2024	796.62	ANNUAL MAINTENANCE
		3	250.0	06/07/2024	07/10/2024	793.49	ANNUAL MAINTENANCE
		4	250.0	06/07/2024	07/10/2024	793.00	ANNUAL MAINTENANCE
JKSPDC							
83	UPPER SINDH-II HPS	3	35.0	04/01/2024	09/30/2024	4,391.92	ANNUAL MAINTENANCE
		3	35.0	12/16/2024	03/27/2025	2,440.40	MISC.PAINTING WORKS/OTHER
		4	35.0	04/01/2024	01/27/2025	7,247.92	ANNUAL MAINTENANCE
		4	35.0	02/23/2025	03/31/2025	887.92	ANNUAL MAINTENANCE
		5	35.0	09/25/2024	09/30/2024	143.92	MISC.PAINTING WORKS/OTHER
		5	35.0	12/31/2024	03/31/2025	2,183.92	MISC.PAINTING WORKS/OTHER
		5	35.0	06/12/2024	06/14/2024	64.35	MISC.PAINTING WORKS/OTHER
NHPC							
84	URI-I HPS	1	120.0	11/09/2024	11/30/2024	522.90	ANNUAL MAINTENANCE
		2	120.0	08/01/2024	08/07/2024	165.03	INSPECTION OF GENERATING
		2	120.0	04/01/2024	06/11/2024	1,726.77	STATOR WINDING

S.No	STATION	UNIT	CAPACITY(MW)	DATE OF OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
		3	120.0	12/07/2024	01/05/2025	705.68	ANNUAL MAINTENANCE
		4	120.0	02/24/2025	02/27/2025	83.82	INSPECTION OF GENERATING
		4	120.0	01/06/2025	02/12/2025	884.50	ANNUAL MAINTENANCE
85	URI-II HPS	1	60.0	01/06/2025	01/27/2025	505.12	ANNUAL MAINTENANCE
		1	60.0	02/11/2025	02/21/2025	250.58	MISC.PAINTING WORKS/OTHER
		2	60.0	11/19/2024	12/09/2024	483.07	ANNUAL MAINTENANCE
		2	60.0	12/19/2024	12/23/2024	90.53	MAIN GENERTATOR
		3	60.0	12/10/2024	01/03/2025	583.23	CAPITAL MAINTENANCE
		4	60.0	01/24/2025	02/11/2025	433.52	ANNUAL MAINTENANCE
JPPVL							
86	VISHNU PRAYAG HPS	2	100.0	01/24/2025	01/26/2025	54.58	ANNUAL MAINTENANCE
		3	100.0	12/05/2024	12/07/2024	54.27	ANNUAL MAINTENANCE
UJVNL							
87	VYASI HPS	1	60.0	01/26/2025	01/31/2025	110.50	ANNUAL MAINTENANCE
		1	60.0	04/01/2024	04/17/2024	407.92	ANNUAL MAINTENANCE
		1	60.0	03/05/2025	03/31/2025	636.83	ANNUAL MAINTENANCE
		2	60.0	02/01/2025	02/28/2025	660.58	ANNUAL MAINTENANCE
		2	60.0	11/21/2024	11/30/2024	229.98	ANNUAL MAINTENANCE
		2	60.0	01/26/2025	01/31/2025	110.50	ANNUAL MAINTENANCE
		2	60.0	12/01/2024	12/03/2024	63.50	ANNUAL MAINTENANCE
Southern							
TANGEDCO							
88	ALIYAR HPS	1	60.0	01/25/2025	01/28/2025	86.25	MISC.PAINTING WORKS/OTHER
89	BHAWANI BARRAGE-II	1	15.0	02/19/2025	03/06/2025	365.68	ANNUAL MAINTENANCE
		2	15.0	02/19/2025	03/27/2025	866.60	ANNUAL MAINTENANCE
90	BHAWANI BARRAGE-III	1	15.0	06/01/2024	06/22/2024	517.42	MISC.PAINTING WORKS/OTHER
		1	15.0	07/01/2024	07/29/2024	681.83	MISC.PAINTING WORKS/OTHER
		1	15.0	10/18/2024	10/21/2024	85.00	MISC.PAINTING WORKS/OTHER
		2	15.0	07/01/2024	07/29/2024	681.42	MISC.PAINTING WORKS/OTHER
		2	15.0	10/21/2024	10/30/2024	205.92	MISC.PAINTING WORKS/OTHER
		2	15.0	10/17/2024	10/21/2024	94.67	MISC.PAINTING WORKS/OTHER
		2	15.0	06/01/2024	06/08/2024	184.12	MISC.PAINTING WORKS/OTHER
91	BHAWANI KATTAL	1	15.0	04/01/2024	04/23/2024	545.00	ANNUAL MAINTENANCE
		1	15.0	03/08/2025	03/25/2025	417.50	ANNUAL MAINTENANCE
		2	15.0	04/01/2024	04/11/2024	252.00	ANNUAL MAINTENANCE
KPCL							
92	GERUSUPPA HPS	2	60.0	12/16/2024	12/26/2024	254.57	ANNUAL MAINTENANCE
		3	60.0	12/01/2024	12/13/2024	296.33	ANNUAL MAINTENANCE
KSEB							

S.No	STATION	UNIT	CAPACITY(MW)	DATE OF OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
93	IDAMALAYAR HPS	1	37.5	11/09/2024	11/27/2024	426.18	ANNUAL MAINTENANCE
		2	37.5	11/08/2024	11/22/2024	335.00	MISCELLANEOUS PLANNED
94	IDUKKI HPS	1	130.0	03/09/2025	03/12/2025	76.82	TURBINE INSPECTION MISC
		1	130.0	08/23/2024	09/08/2024	392.02	ANNUAL MAINTENANCE
		1	130.0	10/01/2024	10/11/2024	251.10	ANNUAL MAINTENANCE
		2	130.0	12/11/2024	01/01/2025	513.25	ANNUAL MAINTENANCE
		3	130.0	06/24/2024	07/20/2024	645.03	BOILER OVERHAUL/ ANNUAL
		4	130.0	10/18/2024	11/15/2024	680.73	ANNUAL MAINTENANCE
		5	130.0	07/23/2024	08/16/2024	593.62	ANNUAL MAINTENANCE
		6	130.0	11/18/2024	12/06/2024	441.97	ANNUAL MAINTENANCE
KPCL							
95	JOG HPS	1	13.2	01/19/2025	01/28/2025	231.42	RENOVATION/MODERNISATION
		2	13.2	02/08/2025	02/12/2025	102.58	RENOVATION/MODERNISATION
		5	21.6	11/30/2024	12/24/2024	587.95	ANNUAL MAINTENANCE
		5	21.6	03/05/2025	03/10/2025	125.57	RENOVATION/MODERNISATION
		6	21.6	11/19/2024	12/04/2024	383.58	RENOVATION/MODERNISATION
		6	21.6	12/11/2024	12/24/2024	322.67	ANNUAL MAINTENANCE
		7	21.6	05/19/2024	06/20/2024	783.65	FOREBAY WORKS
		8	21.6	12/11/2024	12/27/2024	406.17	R AND M WORKS
		8	21.6	04/01/2024	06/20/2024	1,930.83	RUNNER INSPECTION
96	KADRA HPS	1	50.0	11/12/2024	11/30/2024	434.05	ANNUAL MAINTENANCE
		2	50.0	10/17/2024	11/05/2024	475.12	ANNUAL MAINTENANCE
		3	50.0	12/06/2024	12/27/2024	493.33	ANNUAL MAINTENANCE
97	KALINADI SUPA HPS	1	50.0	01/08/2025	01/13/2025	136.12	RENOVATION/MODERNISATION
		2	50.0	01/14/2025	01/20/2025	146.88	RENOVATION/MODERNISATION
		2	50.0	07/01/2024	07/12/2024	276.80	ANNUAL MAINTENANCE
98	KODASALI HPS	1	40.0	12/05/2024	01/10/2025	869.42	ANNUAL MAINTENANCE
		2	40.0	11/09/2024	11/28/2024	468.50	ANNUAL MAINTENANCE
		3	40.0	10/18/2024	11/06/2024	460.67	ANNUAL MAINTENANCE
TANGEDCO							
99	KUNDAH-I HPS	2	20.0	05/13/2024	06/11/2024	715.67	ANNUAL MAINTENANCE
		3	20.0	07/01/2024	07/15/2024	357.08	ANNUAL MAINTENANCE
100	KUNDAH-IV HPS	12	50.0	01/01/2025	01/31/2025	743.98	MONTHLY MAINTENANCE
		12	50.0	12/23/2024	12/31/2024	203.75	MONTHLY MAINTENANCE
TEDAG							
101	KUNDAH-V HPS	14	20.0	07/01/2024	07/08/2024	169.00	MISC.PAINTING WORKS/OTHER
		14	20.0	04/19/2024	04/30/2024	255.00	MISC.PAINTING WORKS/OTHER
		14	20.0	05/13/2024	05/31/2024	423.00	MISC.PAINTING WORKS/OTHER

S.No	STATION	UNIT	CAPACITY(MW)	DATE OF OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
		14	20.0	06/01/2024	06/24/2024	568.50	MISC.PAINTING WORKS/OTHER
		15	20.0	04/07/2024	04/30/2024	529.00	MISC.PAINTING WORKS/OTHER
		15	20.0	06/16/2024	06/30/2024	327.00	MISC.PAINTING WORKS/OTHER
KSEB							
102	KUTTIYADI ADDL EXTN	1	50.0	11/19/2024	12/10/2024	506.08	ANNUAL MAINTENANCE
		2	50.0	01/06/2025	01/24/2025	448.00	ANNUAL MAINTENANCE
		2	50.0	09/09/2024	09/11/2024	56.87	GENERATOR
		2	50.0	05/22/2024	06/04/2024	320.27	ANNUAL MAINTENANCE
103	KUTTIYADI EXTN HPS	4	50.0	09/28/2024	10/28/2024	710.63	ANNUAL MAINTENANCE
104	KUTTIYADI HPS	1	25.0	12/18/2024	12/30/2024	304.17	ANNUAL MAINTENANCE
		3	25.0	04/01/2024	03/31/2025	8,760.00	RENOVATION/MODERNISATION
KPCL							
105	LIGANAMAKKI HPS	2	27.5	04/01/2024	03/31/2025	8,760.00	RUNNER REPAIR
TANGEDCO							
106	LOWER METTUR-I HPS	1	15.0	05/27/2024	06/06/2024	249.25	ANNUAL MAINTENANCE
		2	15.0	06/03/2024	06/06/2024	65.27	ANNUAL MAINTENANCE
107	LOWER METTUR-II HPS	3	15.0	05/16/2024	05/25/2024	221.83	OVERHAULING WORKS
		4	15.0	05/16/2024	05/25/2024	216.92	OVERHAULING WORKS
108	LOWER METTUR-III	5	15.0	04/02/2024	08/07/2024	3,042.50	TURBINE INSPECTION MISC
		6	15.0	05/01/2024	05/16/2024	368.35	ANNUAL MAINTENANCE
109	LOWER METTUR-IV	7	15.0	04/21/2024	05/01/2024	240.17	ANNUAL MAINTENANCE
		8	15.0	04/21/2024	05/01/2024	246.67	ANNUAL MAINTENANCE
KSEB							
110	LOWER PERIYAR HPS	1	60.0	12/03/2024	12/12/2024	227.55	ANNUAL MAINTENANCE
		2	60.0	11/11/2024	11/21/2024	249.58	ANNUAL MAINTENANCE
TANGEDCO							
111	MOYAR HPS	2	12.0	05/06/2024	12/31/2024	5,719.00	HRI
		3	12.0	05/06/2024	09/30/2024	3,511.00	MISC.PAINTING WORKS/OTHER
KPCL							
112	MUNIRABAD HPS	3	10.0	04/01/2024	07/19/2024	2,639.07	TURBINE INSPECTION MISC
KSEB							
113	NARIAMANGLAM HPS	1	17.55	12/27/2024	01/08/2025	292.17	DAM/SPILL GATES
		1	17.55	02/28/2025	03/15/2025	368.07	ANNUAL MAINTENANCE
		2	17.55	01/20/2025	02/10/2025	504.98	ANNUAL MAINTENANCE
		2	17.55	12/27/2024	01/08/2025	293.70	DAM/SPILL GATES
		3	17.55	04/08/2024	05/29/2024	1,231.07	ANNUAL MAINTENANCE
		3	17.55	12/27/2024	01/08/2025	291.93	DAM/SPILL GATES
114	PANNIAR HPS	1	15.0	02/06/2025	02/16/2025	258.46	ANNUAL MAINTENANCE
		1	15.0	12/27/2024	01/06/2025	234.87	DAM/SPILL GATES

S.No	STATION	UNIT	CAPACITY(MW)	DATE OF OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
		2	15.0	01/15/2025	02/06/2025	537.25	ANNUAL MAINTENANCE
		2	15.0	12/27/2024	01/06/2025	234.68	DAM/SPILL GATES
TANGEDCO							
115	PAPANASAM HPS	1	8.0	05/03/2024	05/13/2024	251.58	ANNUAL MAINTENANCE
		2	8.0	05/03/2024	05/30/2024	648.25	ANNUAL MAINTENANCE
		3	8.0	05/20/2024	06/20/2024	734.50	MISCELLANEOUS PLANNED
116	PARSON`S VALLEY	1	30.0	06/01/2024	06/25/2024	593.00	OVERHAULING WORKS
117	PERIYAR HPS	1	42.0	05/13/2024	06/10/2024	664.18	OVERHAULING WORKS
		2	42.0	05/06/2024	06/12/2024	892.50	ANNUAL MAINTENANCE
		3	42.0	05/13/2024	06/14/2024	782.43	ANNUAL MAINTENANCE
		4	35.0	05/15/2024	05/31/2024	397.97	ANNUAL MAINTENANCE
KSEB							
118	PORINGALKUTTU HPS	1	8.0	01/27/2025	02/14/2025	438.45	ANNUAL MAINTENANCE
		2	8.0	11/15/2024	12/06/2024	517.58	ANNUAL MAINTENANCE
		3	8.0	05/08/2024	05/28/2024	487.26	ANNUAL MAINTENANCE
		3	8.0	02/21/2025	03/12/2025	464.05	ANNUAL MAINTENANCE
		4	8.0	12/16/2024	12/31/2024	370.58	ANNUAL MAINTENANCE
		4	8.0	01/24/2025	01/27/2025	68.42	ANNUAL MAINTENANCE
TANGEDCO							
119	PYKARA HPS	1	7.0	04/19/2024	04/30/2024	264.00	MISC.PAINTING WORKS/OTHER
		1	7.0	04/01/2024	04/05/2024	108.50	OVERHAULING WORKS
120	PYKARA ULTMATE HPS	2	50.0	07/21/2024	10/13/2024	2,015.75	MONTHLY MAINTENANCE
KSEB							
121	SABARIGIRI HPS	3	50.0	08/29/2024	09/26/2024	672.00	ANNUAL MAINTENANCE
		4	50.0	02/05/2025	02/20/2025	366.68	ANNUAL MAINTENANCE
		5	50.0	10/02/2024	12/05/2024	1,541.13	ANNUAL MAINTENANCE
		5	50.0	12/09/2024	12/11/2024	50.50	TESTING/CHECKING
		6	50.0	02/24/2025	03/10/2025	346.23	ANNUAL MAINTENANCE
TANGEDCO							
122	SARKARPATHY HPS	1	30.0	06/01/2024	06/30/2024	719.98	OVERHAULING WORKS
		1	30.0	05/20/2024	05/31/2024	277.42	OVERHAULING WORKS
KSEB							
123	SENGULAM HPS	1	12.0	12/03/2024	12/12/2024	225.58	ANNUAL MAINTENANCE
		2	12.0	03/03/2025	03/05/2025	57.63	MISCELLANEOUS PLANNED
		2	12.0	12/18/2024	01/06/2025	467.07	ANNUAL MAINTENANCE
		2	12.0	04/01/2024	08/01/2024	2,939.43	ANNUAL MAINTENANCE
		3	12.0	01/23/2025	02/06/2025	346.32	ANNUAL MAINTENANCE
		4	12.0	02/13/2025	03/28/2025	1,042.28	ANNUAL MAINTENANCE
KPCL							

S.No	STATION	UNIT	CAPACITY(MW)	DATE OF OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
124	SHARAVATHI HPS	10	103.5	10/15/2024	10/18/2024	84.87	PENSTOCK PRESSURE SHAFT
		10	103.5	01/10/2025	01/16/2025	156.33	PENSTOCK PRESSURE SHAFT
		5	103.5	08/18/2024	08/23/2024	144.00	MISC. SHORT DURATION
		5	103.5	04/01/2024	04/03/2024	58.13	MISCELLANEOUS PLANNED
		7	103.5	12/16/2024	12/20/2024	100.13	OVERHAULING WORKS
		9	103.5	09/24/2024	09/27/2024	84.77	GENERATOR
KSEB							
125	SHOLAYAR HPS	1	18.0	05/20/2024	05/29/2024	225.02	PENSTOCK PRESSURE SHAFT
		1	18.0	06/23/2024	07/15/2024	518.37	ANNUAL MAINTENANCE
		2	18.0	05/20/2024	05/29/2024	224.85	PENSTOCK PRESSURE SHAFT
		2	18.0	12/07/2024	12/24/2024	396.37	ANNUAL MAINTENANCE
		3	18.0	05/20/2024	05/29/2024	225.52	PENSTOCK PRESSURE SHAFT
		3	18.0	11/30/2024	12/06/2024	142.27	MISCELLANEOUS PLANNED
		3	18.0	10/01/2024	10/20/2024	448.95	ANNUAL MAINTENANCE
KPCL							
126	SIVASAMUNDRUM HPS	10	6.0	04/01/2024	02/28/2025	7,992.00	MISC.PAINTING WORKS/OTHER
		2	3.0	04/01/2024	04/30/2024	696.00	ANNUAL MAINTENANCE
		2	3.0	05/01/2024	03/01/2025	7,307.93	MISC.PAINTING WORKS/OTHER
		7	6.0	04/01/2024	03/31/2025	8,760.00	MISC.PAINTING WORKS/OTHER
		8	6.0	03/01/2025	03/16/2025	360.00	STATOR WINDING
		9	6.0	04/01/2024	03/31/2025	8,760.00	MISC.PAINTING WORKS/OTHER
TANGEDCO							
127	SURULIYAR HPS	1	35.0	05/16/2024	05/24/2024	194.75	PENSTOCK PRESSURE SHAFT
KSEB							
128	THOTTIYAR HPS	1	10.0	02/12/2025	02/20/2025	208.12	PENSTOCK B.F.VALVE PROBLEM
		2	30.0	02/02/2025	02/20/2025	445.25	BUTTERFLY VALVE
KPCL							
129	VARAHI HPS	1	115.0	12/17/2024	01/02/2025	391.64	ANNUAL MAINTENANCE
		1	115.0	04/01/2024	05/08/2024	901.45	ANNUAL MAINTENANCE
		2	115.0	04/01/2024	05/10/2024	951.77	ANNUAL MAINTENANCE
		2	115.0	01/21/2025	02/03/2025	319.72	ANNUAL MAINTENANCE
		3	115.0	11/27/2024	12/13/2024	397.48	MAINTENANCE OF AUXILIARY
		4	115.0	11/16/2024	11/26/2024	248.65	ANNUAL MAINTENANCE
		4	115.0	06/13/2024	07/03/2024	494.58	MISCELLANEOUS PLANNED
Western							
MPPGCL							
130	BANSAGAR-II HPS	1	15.0	06/24/2024	07/09/2024	369.26	ANNUAL MAINTENANCE
		2	15.0	06/03/2024	06/21/2024	442.35	ANNUAL MAINTENANCE
131	BANSAGAR TONS-I	1	105.0	06/03/2024	07/17/2024	1,063.42	ANNUAL MAINTENANCE

S.No	STATION	UNIT	CAPACITY(MW)	DATE OF OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
132	BARGI HPS	2	45.0	06/28/2024	07/23/2024	605.17	ANNUAL MAINTENANCE
TATA MAH.							
133	BHIRA HPS	4	25.0	04/01/2024	03/31/2025	8,760.00	ANNUAL MAINTENANCE
134	BHIRA PSS HPS	1	150.0	03/13/2025	03/20/2025	172.60	ANNUAL MAINTENANCE
MAHAGENCO							
135	BHIRA TAIL RACE HPS	1	40.0	04/01/2024	06/14/2024	1,795.92	DAM RESIDUAL WORKS
		2	40.0	04/01/2024	07/01/2024	2,206.00	DAM RESIDUAL WORKS
MPPGCL							
136	GANDHI SAGAR HPS	4	23.0	09/14/2024	09/23/2024	232.56	DRAFT TUBE
NHDC							
137	INDIRA SAGAR HPS	1	125.0	05/18/2024	06/01/2024	351.08	ANNUAL MAINTENANCE
		2	125.0	06/02/2024	06/12/2024	251.97	ANNUAL MAINTENANCE
		3	125.0	06/13/2024	06/22/2024	227.40	ANNUAL MAINTENANCE
		4	125.0	03/17/2025	03/31/2025	349.08	ANNUAL MAINTENANCE
		5	125.0	05/02/2024	05/17/2024	375.72	ANNUAL MAINTENANCE
		6	125.0	04/16/2024	04/30/2024	351.37	ANNUAL MAINTENANCE
		7	125.0	04/01/2024	04/15/2024	349.05	ANNUAL MAINTENANCE
		7	125.0	07/29/2024	08/01/2024	93.85	MISCELLANEOUS PLANNED
		8	125.0	03/01/2025	03/13/2025	297.87	ANNUAL MAINTENANCE
		8	125.0	07/21/2024	07/25/2024	105.02	MISCELLANEOUS PLANNED
TATA MAH.							
138	KHOPOLI HPS	2	24.0	04/01/2024	03/31/2025	8,760.00	ANNUAL MAINTENANCE
		3	24.0	04/01/2024	03/31/2025	8,760.00	ANNUAL MAINTENANCE
MAHAGENCO							
139	KOYNA DPH HPS	1	18.0	05/12/2024	05/17/2024	133.25	MISC.PAINTING WORKS/OTHER
		1	18.0	10/12/2024	10/31/2024	479.92	MISC.PAINTING WORKS/OTHER
		2	18.0	05/12/2024	05/17/2024	132.50	MISC.PAINTING WORKS/OTHER
140	KOYNA-I&II HPS	1	70.0	12/06/2024	12/09/2024	85.08	RUNNER INSPECTION /REPAIR
		2	70.0	06/25/2024	06/27/2024	68.83	RENOVATION/MODERNISATION
		3	70.0	07/19/2024	08/01/2024	312.00	RENOVATION/MODERNISATION
		6	80.0	09/13/2024	10/16/2024	812.17	GOVERNOR SYSTEM
141	KOYNA-III HPS	1	80.0	01/24/2025	01/31/2025	183.92	MISC.PAINTING WORKS/OTHER
		1	80.0	06/21/2024	06/30/2024	230.42	MISC.PAINTING WORKS/OTHER
		2	80.0	12/25/2024	12/31/2024	155.92	MISC.PAINTING WORKS/OTHER
		2	80.0	06/21/2024	06/30/2024	230.42	MISC.PAINTING WORKS/OTHER
		2	80.0	01/01/2025	01/23/2025	548.83	MISC.PAINTING WORKS/OTHER
		3	80.0	02/01/2025	02/18/2025	425.00	MISC.PAINTING WORKS/OTHER
		3	80.0	04/01/2024	04/23/2024	545.33	MISC.PAINTING WORKS/OTHER
142	KOYNA-IV HPS	1	250.0	09/14/2024	09/17/2024	79.75	MISC.PAINTING WORKS/OTHER

S.No	STATION	UNIT	CAPACITY(MW)	DATE OF OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
NHDC							
143	OMKARESHWAR HPS	1	65.0	04/01/2024	04/09/2024	212.25	ANNUAL MAINTENANCE
		2	65.0	04/09/2024	04/22/2024	319.52	ANNUAL MAINTENANCE
		3	65.0	04/23/2024	05/04/2024	272.05	ANNUAL MAINTENANCE
		4	65.0	05/06/2024	05/22/2024	395.12	ANNUAL MAINTENANCE
		5	65.0	05/23/2024	06/06/2024	343.42	ANNUAL MAINTENANCE
		6	65.0	06/07/2024	06/19/2024	296.30	ANNUAL MAINTENANCE
		7	65.0	03/01/2025	03/20/2025	467.43	ANNUAL MAINTENANCE
		8	65.0	03/22/2025	03/30/2025	194.17	ANNUAL MAINTENANCE
MPPGCL							
144	PENCH HPS	1	80.0	05/17/2024	06/07/2024	507.01	ANNUAL MAINTENANCE
		2	80.0	05/17/2024	06/06/2024	484.78	ANNUAL MAINTENANCE
SSNNL							
145	S SAROVAR CHPH HPS	2	50.0	10/17/2024	10/29/2024	304.73	MISC.PAINTING WORKS/OTHER
		4	50.0	05/12/2024	05/31/2024	470.92	MISC.PAINTING WORKS/OTHER
MAHAGENCO							
146	VAITARNA HPS	1	60.0	12/08/2024	12/31/2024	567.98	MISC.PAINTING WORKS/OTHER
		1	60.0	01/01/2025	01/04/2025	90.92	MISC.PAINTING WORKS/OTHER

CHAPTER-5

FORCED OUTAGES OF HE UNITS

CHAPTER-5
FORCED OUTAGES OF H.E. UNITS

5.1 Forced outages of generating units are due to various problems in generating equipments, auxiliary systems and civil structures. Based on the analysis carried out for 741 hydro generating units installed in 216 Hydro Electric Power Stations, non-availability of hydro-electric units in the country due to forced outages during the year 2024-25 (excluding miscellaneous outages) was 3.02% as compared to 2.84% during 2023-24.

Unit-wise details of forced outages of duration 24 hours and above are given in **Annex- 5.1**.

During 2024-25, the turbine and generator faults accounted for 38.67% and 38.13% of the forced outages respectively whereas other equipment & civil structure faults accounted for 20.14% & 3.07% respectively of the forced outages. The summary of forced outages caused due to breakdown of generator, turbine and other equipment during 2024-25 vis-à-vis 2023-24 is given in **Table 5.1** below.

TABLE 5.1

EQUIPMENT/SYSTEM-WISE FORCED OUTAGES
(2024-25 VIS-A-VIS 2023-24)

Sl. No.	Equipment	Forced Outage (Hours)		% of total Forced Outage		Increase/ Decrease viz-z-viz 2023-24
		2024-25	2023-24	2024-25	2023-24	
1	GENERATOR	45874.72	38428.21	38.13	29.30	-19.38
2	TURBINE	46521.55	48240.64	38.67	36.78	3.56
3	CIVIL STRUCTURE	3695.91	31294.60	3.07	23.86	88.19
4	OTHER EQUIPMENT	24226.26	13203.02	20.14	10.07	-83.49
	Total	**120318.44**	**131166.46**	**100.00**	**100.00**	**8.27**

It is observed that forced outages in 2024-25 vis-a-vis 2023-24 have increased on account of generator and other equipment whereas the same have decreased on account of turbine and civil structures.

5.2 FORCED OUTAGE DUE TO GENERATOR COMPONENTS

5.2.1 The major source of forced outage during 2024-25 includes Stator (46.41%), followed by Rotor (24.48%) and Miscellaneous Generator components (11.53%) which together accounted for more than the 82.42% of the forced outages due to generator components.

The details of forced outages due to various generator faults and associated systems under different categories based on their size are given in **Table 5.2** below:

TABLE 5.2

FORCED OUTAGE HOURS DUE TO BREAKDOWN OF GENERATOR COMPONENTS (PERIOD: 2024-25)

Sl. No.	Components of Generator	Unit size up to 50 MW		Unit size above 50 MW & up to 100 MW		Unit size above 100 MW		Total	
		Outage Hours	% of Total no. of Hours	Outage Hours	% of Total no. of Hours	Outage Hours	% of Total no. of Hours	Outage Hours	% of Total no. of Hours
1	AUTOMATIC VOLTAGE REGULATOR	0.97	0.00	5.15	0.09	147.33	0.91	153.45	0.33
2	BRAKE AND JACKS	113.05	0.48	1.50	0.03	5.83	0.04	120.38	0.26
3	EXCITATION SYSTEM	534.01	2.26	2.10	0.04	3171.82	19.52	3707.93	8.08
4	GENERATOR COOLING SYSTEM	59.38	0.25	1.05	0.02	9.37	0.06	69.80	0.15
5	LOWER GUIDE BEARING	20.94	0.09	1.10	0.02	15.85	0.10	37.89	0.08
6	MISCELLANEOUS GENERATOR	2357.57	9.97	1798.11	30.08	1135.95	6.99	5291.63	11.53
7	PROTECTION SYSTEM	396.90	1.68	2541.45	42.52	107.88	0.66	3046.24	6.64
8	ROTOR	3183.02	13.46	1129.85	18.90	6917.89	42.57	11230.76	24.48
9	STATOR	16463.91	69.62	239.55	4.01	4589.25	28.24	21292.71	46.41
10	THRUST BEARING	473.38	2.00	2.22	0.04	5.43	0.03	481.03	1.05

11	UPPER GUIDE BEARING	44.22	0.19	255.58	4.28	0.00	0.00	299.80	0.65
12	VIBRATION/SOUND/ALIGNMENT	0.00	0.00	0.00	0.00	143.09	0.88	143.09	0.31
	Total	**23647.36**	**100**	**5977.66**	**100**	**16249.71**	**100**	**45874.72**	**100**

From the Table 5.2, it is observed that Stator fault (69.62%) constitute the major reason for forced outage in respect unit size up to 50 MW, Protection System fault (42.52%) constitute the major contributors of forced outage in respect unit size above 50 MW and upto 100 MW and Rotor fault (42.57%) constitute the major contributors of forced outage in respect unit size above 100 MW.

5.3 FORCED OUTAGE DUE TO TURBINE COMPONENTS

5.3.1 Faults in Miscellaneous Turbine Components parts (27.46%), Runner/underwater parts (24.45%) and Shaft Vibration / Alignment (22.64%) are the major reasons of forced outages on account of turbine components.

The details of forced outages due to various turbine faults and associated systems under different categories based on their size are given in **Table 5.3** below:

TABLE 5.3

FORCED OUTAGE HOURS DUE TO BREAKDOWN OF TURBINE COMPONENTS
PERIOD: 2024-25

Sl. No.	Components of Turbine	Unit size up to 50 MW		Unit size above 50 MW & up to 100 MW		Unit size above 100 MW		Total	
		Outage Hours	% of Total no. of Hours	Outage Hours	% of Total no. of Hours	Outage Hours	% of Total no. of Hours	Outage Hours	% of Total no. of Hours
1	GOVERNOR SYSTEM	227.69	0.96	77.94	0.71	675.72	5.69	981.36	2.11
2	MISCELLANEOUS TURBINE COMPONENTS	10235.08	43.23	275.05	2.51	2264.83	19.06	12774.96	27.46
3	OTHERS	7226.78	30.52	8.78	0.08	91.73	0.77	7327.30	15.75
4	BEARING	103.35	0.44	1323.73	12.07	362.07	3.05	1789.15	3.85

5	GUIDE VANES	30.22	0.13	0.00	0.00	14.33	0.12	44.55	0.10
6	RUNNER/UNDERWATER PARTS	2615.45	11.05	8760.00	79.90	0.00	0.00	11375.45	24.45
7	SHAFT VIBRATION/ALIGNMENT/S	3194.94	13.49	509.56	4.65	6822.30	57.43	10526.80	22.63
8	MAIN INLET VALVE	44.35	0.19	8.50	0.08	1649.13	13.88	1701.98	3.66
	Total	**23677.86**	**100**	**10963.57**	**100**	**11888.08**	**100**	**46529.51**	**100**

From the Table 5.3, it is observed that Miscellaneous turbine components (43.23%) constitute the major reason for forced outage in respect unit size up to 50 MW while runner / underwater parts (79.90 %) constitute the major contributor of forced outage in respect of unit size above 50 MW and upto 100 MW and Shaft Vibration / alignments (57.45%) constitute the major contributor of forced outage in respect of unit size above 100 MW.

5.4 ANALYSIS BASED ON TYPE OF TURBINE

The analysis of forced outages due to turbine components as per type of turbines is given in **Table 5.4** below:

TABLE 5.4

FORCED OUTAGES-TURBINE TYPE-WISE
PERIOD: 2024-25

S. No.	Type of Turbine	Number of Units	Installed Capacity MW	Forced Outage Hours	Avg. Forced Outage Hours per Unit
1	BULB	26	684.00	2592.00	99.69
2	FRANCIS	426	33126.22	36546.22	85.77
3	KAPLAN	133	4399.05	3712.95	27.92
4	PELTON	156	9518.90	3678.34	23.58
	TOTAL	**741**	**47728.16**	**46529.51**	**62.78**

Forced outage rate was observed to be the highest in case of Bulb turbines (99.69 hrs./unit) followed by Francis turbines (85.77 hrs./unit) and Kaplan turbines (27.92 hrs./unit).

5.5 ANALYSIS BASED ON MAKE OF UNITS

The comparative performance of generating units of different makes is indicated in **Table 5.5**. The outage figures in the table relate to faults in turbine and generator only.

TABLE 5.5

FORCED OUTAGES DUE TO FAULT IN TURBINE & GENERATOR (SUPPLIER-WISE) PERIOD: 2024-25

S. No.	Name of Supplier/ Country of Make	No. of Units	Installed Capacity (MW)	Total No. of Forced Outages Hours)	Average Forced Outages due to Generating Units (Hours/Unit)	Performance Ranking in Term of Lowest Average Outage Hours/Unit
A-Indigenous						
1	BHEL	318	20850.30	59789.32	188.02	5
2	Others*	54	3395.50	10016.32	185.49	3
	SUB TOTAL	**372**	**26825.52**	**69805.64**	**187.65**	
B-Imported						
3	USA	9	351.00	10545.82	1171.72	10
4	U.K.	63	1242.10	13409.66	212.85	6
5	France	31	2179.20	159.13	5.133	1
6	Canada	44	3132.00	2472.70	56.20	2
7	Russian Federation	26	2804.00	6656.12	256.00	7
8	Switzerland	21	790.20	24049.97	1145.24	9
9	Japan	76	6416.20	14372.78	189.12	4
10	Other	99	6560	52655.08	531.87	8
	SUB-TOTAL	**369**	**23482.35**	**124321.26**	**336.91**	
	TOTAL	**741**	**47728.17**	**194126.90**	**261.98**	

* Indigenous supplier like Andriz India, B Fouress Bangalore, Alstom India, VA Tech India, etc.

5.6 ANALYSIS AGE-WISE

Details of forced outages of generating units commissioned during different years are indicated in **Table 5.6**. Forced outages caused by equipment failure i.e. the fault relating to

generator, turbine, and auxiliary system equipments have been taken into account for the purpose of computation.

TABLE - 5.6

FORCED OUTAGES DUE TO EQUIPMENT BREAKDOWN (AGE-WISE) PERIOD: 2024-25

S. No.	Year of Commissioning	No. of Units	Installed Capacity (MW)	Forced Outage (Hours)	Average Annual Non-availability per Unit (Hours)
1	2024-25	10	799.99	13.00	1.3
2	2023-24	2	60	0	0
3	2022-23	2	120	0	0
4	2021-22	7	393	50.23	7.18
5	2020-21	8	510	6.30	0.79
6	2019-20	2	300.00	0.00	0.0
7	2018-19	3	140.00	1.28	0.43
8	2017-18	16	795.00	1862.42	116.4
9	2016-17	18	1,659.00	109.33	6.11
10	2015-16	17	1,516.00	623.80	36.69
11	2010-11 to 2014-15	63	4,437.00	74867.75	1188.38
12	2005-06 to 2009-10	66	7,077.00	39828.40	603.46
13	2000-01 to 2004-05	74	6,741.80	9828.11	132.81
14	1989-90 to 1999-2000	86	5,769.70	28775.03	334.59
15	1978-79 to 1988-89	124	7,259.10	24620.16	198.55
16	1967-68 to 1977-78	81	5,279.75	23706.8	292.68
17	Up to 1966-67	162	4,724.85	62182.2	383.84
	Total	**741**	**47728.17**	**266474.90**	**359.62**

It is observed that the per unit forced outage rate was relatively higher in older units and was maximum in the case of units commissioned in during 2010-11 to 2014-15 (1188.38 hrs./unit).

5.7 REGION-WISE PERFORMANCE

The region-wise summary of performance of the hydel generating units is indicated in **Table 5.7**. For the purpose of computation, all types of forced outages/tripping due to faults in generator, turbine, auxiliary system & other equipments and civil structure faults (excluding misc.) have been included.

TABLE 5.7

FORCED OUTAGES – REGION-WISE
PERIOD: 2024-25

S.No	Region	No. of Units	Installed Capacity (MW)	% Non-availability due to Forced Outages
1	Northern	266	20474.26	1.66
2	Western	101	7392.00	2.27
3	Southern	250	11847.15	3.36
4	Eastern	86	5987.75	6.17
5	North Eastern	38	2027.00	5.02
	All India	**741**	**47728.16**	**3.02**

Performance of hydro generating equipment installed in Northern Region was the best as the non-availability due to forced outages was least (1.66%). The average non-availability of the units in the Eastern Region (6.17%), North Eastern Region (5.02%), Western Region (2.27%) and in the Southern Region (3.36%) was observed to be on the higher side.

5.8 FORCED OUTAGE – UTILITY-WISE

The forced outages of hydro electric units under various Central Sector Utilities, Private Sector and State Power Generation Corporations are indicated in **Table 5.8**.

All types of forced outages/tripping due to problems in generating units, auxiliary equipments and civil structure have been taken into account for the analysis.

Table 5.8

FORCED OUTAGES- BOARD /CORPORATION WISE
PERIOD: 2024-25

S. No.	Organization	No. of Units	Installed Capacity (MW)	Forced Outage (Hours)	Average Annual Forced Outage/Unit (Hours)
Central Sector					
1	BBMB	28	2956.30	720.12	25.72
2	DVC	5	143.20	61.98	12.40
3	NEEPCO.	20	1500.00	10261.58	513.08
4	NHDC	16	1520.00	89.72	5.61
5	NHPC	73	6051.20	2408.84	33.00
6	NTPC LTD.	4	800.00	540.62	135.15
7	SJVNL	14	1972.02	101.70	7.26
8	THDC	8	1400.00	0.00	0.00

	Sub Total	**168**	**16342.72**	**14184.56**	**84.43**
State Sector					
1	APGCL	2	100.00	26.48	13.24
2	APGENCO	34	1796.75	27578.17	811.12
3	BVPCL	3	99.99	0	0
4	CSPGCL	3	120.00	0.00	0.00
5	GSECL	8	540.00	1726.50	215.81
7	HPPCL	8	406.00	625.22	78.15
8	HPSEB	12	372.00	10953.03	912.75
9	JKSPDC	12	1110.00	74.50	6.21
10	JUUNL	2	130.00	300.53	150.27
11	KPCL	66	3617.20	9756.25	147.82
12	KSEB	51	1964.15	3692.57	72.40
13	MAHAGENCO	24	2406.00	4379.20	182.47
14	MePGCL	13	322.00	6283.90	483.38
15	MPPGCL	23	875.00	12319.37	535.62
16	OHPC	31	2039.80	5579.05	179.97
17	PSPCL	25	1051.00	557.70	22.31
18	RRVUNL	11	411.00	7402.68	672.97
19	SSNNL	11	1450.00	613.20	55.75
20	TANGEDCO	69	2178.20	29008.33	420.41
21	TSGENCO	36	2405.60	25179.18	699.42
22	TUL	6	1200.00	0.00	0.00
23	UJVNL	36	1372.15	11570.17	321.39
24	UPJVNL	15	501.60	702.02	46.80
25	WBSEDCL	12	986.00	17772.48	1481.04
	Sub Total	**513**	**27454.44**	**176100.51**	**343.28**
Private Sector					
1	ADHPL	2	192.00	1369.48	684.74
2	AHPC (GVK)	4	330.00	0.00	0.00
3	DEPL	2	96.00	24.95	12.47
4	DLHP	1	34.00	2.05	2.05
5	E.P.P.L.	2	100.00	45.65	22.82
6	GBHPPL	2	70.00	0.00	0.00
7	GIPL	2	110.00	34.11	17.05

8	GMR BHHPL	3	180.00	0.85	0.28
9	HBPCL	7	1345.00	59.42	8.49
10	HSPCL	2	100.00	0.00	0.00
11	IAEPL	3	36.00	0.00	0.00
12	JPPVL	4	400.00	30.19	7.55
13	L&T	3	99.00	161.47	53.82
14	MBPC	2	113.00	38.20	19.10
12	MPCL	2	86.00	1142.83	571.42
13	SEPL	2	97.00	0.00	0.00
14	SKPPPL	2	96.00	0.00	0.00
15	TATA MAH.	15	447.00	932.63	62.18
	Sub Total	**60**	**3931.00**	**3841.83**	**64.03**
	All India Total	**741**	**47728.16**	**194126.90**	**261.98**

It is observed that utility-wise, per unit forced outages for generating units was maximum in respect of hydro-electric stations under NEEPCO (513.08 hrs./unit). On the other hand, the hydro generating units of THDC, TUL, AHPC (GVK), GBHPPL, HSPCL, IAEPL, SEPL & SKPPPL have reported nil forced outage operation.

5.9 DURATION OF FORCED OUTAGES

There were total 2036 forced outages/tripping during the year 2024-25. Duration of individual outage varied widely from a few minutes to the maximum of full year.

The duration pattern of forced outages is indicated in **Table 5.9** and **Exhibit 5.1**. It could be seen that about 61.49% of the total forced shutdown were of duration less than 6 hour while 27.95% of outages were of duration more than 6 hours and less than 24 hours and only 3.44% of shutdowns persisted for duration more than 10 days.

TABLE 5.9

DURATION PATTERN OF FORCED OUTAGES
PERIOD: 2024-25

S. No.	Duration of Hours	Number of Outages	% of Total of Outages
1	Less than 6 hour	1252	61.49
2	6 to 24 hours	569	27.95
3	1 to 10 days	145	7.12
4	more than 10 days	70	3.44
	Total No. of Outages	**2036**	**100**

5.10 FORCED OUTAGES - STATION-WISE

The number of H.E. Stations falling under various ranges of non-availability due to forced outages during the year 2024-25 vis-à-Vis 2023-24 is summarized below in **Table 5.10.**

TABLE 5.10

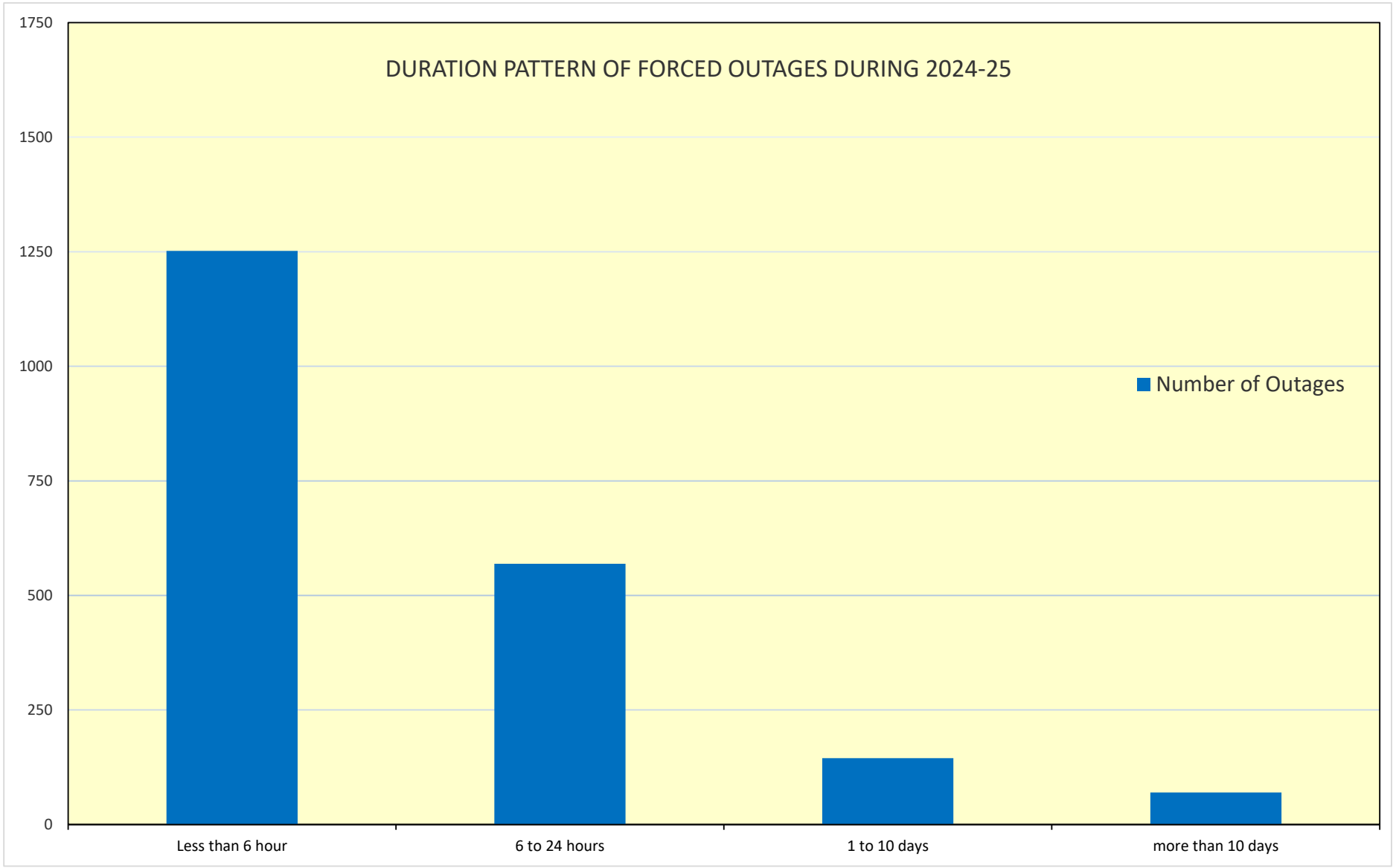
NON-AVAILABILITY OF HE STATIONS DUE TO FORCED OUTAGES
(2024-25 VIS-A-VIS 2023-24)

% Non-Availability due to Forced Outages	2024-25				2023-24			
	Stations		Capacity		Stations		Capacity	
	No.	% of Total	MW	% of Total	No.	% of Total	MW	% of Total
0	101	46.76	20,768.49	43.51	92.00	43.40	18,381.90	39.17
>0 to 1	18	8.33	4,836.30	10.13	18.00	8.49	5,348.30	11.40
>1 to 2	5	2.31	671.00	1.41	4.00	1.89	1,185.00	2.53
>2 to 3	4	1.85	1,878.75	3.94	3.00	1.42	1,506.00	3.21
>3 to 4	7	3.24	601.00	1.26	2.00	0.94	555.00	1.18
>4 to 5	3	1.39	384.00	0.80	1.00	0.47	480.00	1.02
>5	78	36.57	18,888.62	38.95	92.00	43.40	19,471.97	41.49
Total	**216**	**100**	**47728.16**	**100**	**212**	**100**	**46928.17**	**100**

It could be seen from above that there was no forced outage at 101 nos. (46.76% of total) hydro-electric stations during 2024-25 as compared to 92 nos. (43.51% of total) hydro-electric stations during 2023-24.

63.43% of stations had operational availability lower than 95% on account of forced outages alone against the normative design/planned annual availability of 95% during the entire station life. These utilities need to improve their O&M practices to bring down their total outages i.e. planned & forced to less than 5% as per best practices.

It is observed from above that stations may be having high forced outages on account of ageing, O&M management issues, etc. Further, those stations which are having continuously high planned maintenance/forced outages over past few years may be requiring major repair and maintenance works or Renovation & Modernization (R&M) works for improving the availability, reliability & security of the plant besides providing life extension where the assets have outlived their useful life.


DURATION PATTERN OF FORCED OUTAGES DURING 2024-25
1750
1500
1250
1000
750
500
250
0
Number of Outages
Less than 6 hour
6 to 24 hours
1 to 10 days
more than 10 days

CENTRAL ELECTRICITY AUTHORITY
Hydro WING
Hydro Project Planning & Investigation Division

Annexure 5.1

DETAILS OF LONG DURATION FORCED OUTAGE IN HYDRO-ELECTRIC UNITS DURING: 2024-25

(OUTAGE DURATION 24 HOURS AND ABOVE)

S.NO	STATION	UNIT	CAPACITY(MW)	DATE OD OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
Northern							
ADHPL							
1	ALLAIN DUHANGAN HPS	1	96.0	8/18/24, 2:57 PM	8/21/24, 10:16 AM	67.32	POLE FAILURE
		1	96.0	2/6/25, 10:15 AM	3/20/25, 6:14 PM	1015.98	ROTOR MISC. FAULTS
		2	96.0	9/29/24, 3:43 PM	10/9/24, 3:16 PM	239.55	STATOR
NHPC							
2	BAIRA SIUL HPS	3	60.0	5/15/24, 6:45 PM	5/22/24, 11:59 PM	173.25	TURBINE VIBRATIONS HIGH
HBPCL							
3	BASPA HPS	2	100.0	8/23/24, 12:40 AM	8/24/24, 10:30 PM	45.83	GOVERNOR OIL COOLING SYSTEM PROBLEM
BBMB							
4	BHAKRA RIGHT HPS	7	157.0	4/1/24, 12:00 AM	4/21/24, 11:59 PM	504.00	GOVERN.SYSTEM TROUB/EQPT. FAIL/EHG FAULT
NHPC							
5	CHAMERA-I HPS	1	180.0	7/17/24, 12:00 AM	7/18/24, 11:59 PM	48.00	GENERATOR PROTECTION
		3	180.0	8/11/24, 2:24 AM	8/12/24, 5:03 PM	38.65	MAL-FUNCTION OF RELAY
UJVNL							
6	CHIBRO (YAMUNA) HPS	2	60.0	4/1/24, 12:00 AM	4/29/24, 11:55 PM	695.92	VARIOUS MAINTENANCE WORKS
7	CHILLA HPS	2	36.0	7/6/24, 12:00 AM	7/8/24, 3:16 PM	63.27	GOVERN.SYSTEM TROUB/EQPT. FAIL/EHG FAULT
		2	36.0	10/20/24, 12:00 AM	11/6/24, 9:59 AM	417.98	T.B.TEMP./COOLING PROBLEM
		3	36.0	2/16/25, 9:45 AM	2/19/25, 3:20 PM	77.58	ABNORMAL SOUND
8	DHALIPUR HPS	3	17.0	4/16/24, 1:25 AM	5/3/24, 1:13 PM	419.80	ROTOR/ ROTOR EARTH FAULT
UPJVNL							
9	KHARA HPS	1	24.0	6/7/24, 12:00 AM	6/10/24, 11:30 PM	95.50	BREAKER/ISOLATOR PROBLEM
UJVNL							
10	KHATIMA HPS	2	13.8	9/1/24, 6:40 AM	9/3/24, 4:35 PM	57.92	RESERVE SHUT DOWN / STANDBY UNIT
		3	13.8	8/27/24, 12:00 AM	8/31/24, 8:00 PM	116.00	RESERVE SHUT DOWN / STANDBY UNIT
NTPC Ltd.							
11	KOLDAM	2	200.0	5/4/24, 11:46 PM	5/7/24, 4:59 PM	65.22	CONSERVATION OF MAIN FUEL/RSD
		3	200.0	4/26/24, 11:30 PM	4/29/24, 6:14 PM	66.73	CONSERVATION OF MAIN FUEL/RSD

S.NO	STATION	UNIT	CAPACITY(MW)	DATE OD OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
		3	200.0	5/4/24, 11:31 PM	5/8/24, 6:28 PM	90.95	CONSERVATION OF MAIN FUEL/RSD
		4	200.0	4/27/24, 10:45 PM	4/29/24, 6:29 PM	43.73	CONSERVATION OF MAIN FUEL/RSD
		4	200.0	5/4/24, 11:15 PM	5/7/24, 5:44 AM	54.48	CONSERVATION OF MAIN FUEL/RSD
BBMB							
12	KOTLA HPS	1	29.25	9/3/24, 6:19 PM	9/12/24, 6:25 PM	216.12	GENERATOR TRANSFORMER BUCHOLTZ
HPSEB							
13	LARJI HPS	1	42.0	4/1/24, 12:00 AM	5/3/24, 7:40 PM	787.67	FLOODS
		2	42.0	4/1/24, 12:00 AM	8/9/24, 9:38 PM	3141.63	FLOODS
		3	42.0	4/1/24, 12:00 AM	1/17/25, 11:58 PM	7007.97	FLOODING OF POWER HOUSE
MPCL							
14	MALANA HPS	1	43.0	8/11/24, 12:00 AM	9/2/24, 9:00 PM	549.00	INTAKE STRUCTURE TROUBLE
		2	43.0	8/11/24, 12:00 AM	9/4/24, 5:00 PM	593.00	INTAKE STRUCTURE TROUBLE
UJVNL							
15	MANERI BHALI-II HPS	1	76.0	7/22/24, 5:10 PM	7/24/24, 12:38 PM	43.47	ROTOR EARTH FAULT/POLE FAILURE
		1	76.0	8/23/24, 8:05 AM	8/24/24, 12:51 PM	28.77	Turbine Misc
NHPC							
16	NIMMO BAZGO HPS	3	15.0	7/28/24, 8:37 PM	7/30/24, 9:41 PM	49.07	GEN. AIR COOLERS LEAKAGE/DAMAGED/REPLACE
UPJVNL							
17	OBRA HPS	3	33.0	2/28/25, 10:35 PM	3/7/25, 1:50 PM	159.25	LOW OIL LEVEL OPU/SUMP
NHPC							
18	PARBATI-III HPS	2	130.0	8/31/24, 7:02 PM	9/26/24, 5:47 PM	622.75	STATOR EARTH FAULT
UJVNL							
19	RAMGANGA HPS	3	66.0	4/1/24, 12:00 AM	3/31/25, 11:59 PM	8760.00	EHT/CT/PT
		3	66.0	5/25/24, 4:29 AM	6/14/24, 9:42 AM	485.22	GENERATOR DIFFERENTIALPROTECTION
SJVNL							
20	RAMPUR HPS	6	68.67	7/8/24, 12:00 AM	7/9/24, 12:00 AM	24.00	TURBINE VIBRATION
PSPCL							
21	RANJIT SAGAR HPS	2	150.0	6/12/24, 5:10 PM	6/13/24, 8:45 PM	27.58	GENERATING UNIT SHUT DOWN OTHER REASONS
UPJVNL							
22	RIHAND HPS	1	50.0	9/18/24, 11:05 AM	9/20/24, 3:05 PM	52.00	ROTOR EARTH FAULT/POLE FAILURE
		2	50.0	1/4/25, 12:30 PM	1/7/25, 5:30 PM	77.00	BRAKE /LINING/PADS/CUP/PROB./REPLACE
		3	50.0	1/22/25, 5:30 PM	1/23/25, 6:15 PM	24.75	LUB.OIL SYSTEM PROBLEM
		5	50.0	2/16/25, 7:53 PM	2/18/25, 5:32 PM	45.65	GOVERN.SYSTEM TROUB/EQPT. FAIL/EHG FAULT

S.NO	STATION	UNIT	CAPACITY(MW)	DATE OD OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
		6	50.0	8/6/24, 7:45 PM	8/12/24, 8:24 PM	144.65	BREAKER/ISOLATOR PROBLEM
RRVUNL							
23	R P SAGAR HPS	2	43.0	4/1/24, 12:00 AM	2/3/25, 4:05 AM	7396.09	GENERATOR STATOR DAMAGED
HPPCL							
24	SAINJ HPS	2	50.0	4/1/24, 12:00 AM	4/13/24, 2:07 PM	302.12	GENERATOR OVER CURRENT /VOLTAGE RESTRAINT
		2	50.0	4/28/24, 1:28 AM	5/6/24, 4:16 PM	206.80	GOVERNING SYSTEM PROBLEM
NHPC							
25	SALAL HPS	2	115.0	5/27/24, 11:12 AM	5/29/24, 10:30 AM	47.30	MISCELLANEOUS
		2	115.0	5/29/24, 10:30 AM	5/30/24, 11:59 AM	25.48	ROTOR EARTH FAULT
		6	115.0	5/25/24, 1:42 PM	5/29/24, 11:48 AM	94.10	GEN. TRANSFORMER TRIPPING/ DAMAGED
26	SEWA-II HPS	2	40.0	7/9/24, 6:00 PM	7/10/24, 11:59 PM	30.00	NEEDLE PROBLEM
PSPCL							
27	SHANAN HPS	3	15.0	8/10/24, 9:54 AM	8/14/24, 11:59 PM	110.10	SPARKING ACROSS SLIP RING/BRUSHES
		4	15.0	8/24/24, 7:27 PM	8/28/24, 7:35 PM	96.13	NEUTRAL GROUNDING/SURGE PROT. EQUIP.PROB.
		4	15.0	2/9/25, 9:01 AM	2/11/25, 11:10 AM	50.15	INTAKE STRICT./TRASH RACK
		5	50.0	4/2/24, 7:55 PM	4/6/24, 12:57 PM	89.03	TURBINE BEARING OIL LEVEL LOW/HIGH
L&T							
28	SINGOLI BHATWARI HPS	1	33.0	8/1/24, 12:00 AM	8/2/24, 4:17 PM	40.28	HEAVY DOWN POUR/RAIN WATER LEAKAGE/ FLOOD IN RIVER
		2	33.0	8/1/24, 12:00 AM	8/2/24, 2:37 PM	38.62	HEAVY DOWN POUR/RAIN WATER LEAKAGE/ FLOOD IN RIVER
		2	33.0	8/22/24, 8:32 AM	8/23/24, 11:59 PM	39.45	TURBINE PIT FLOODED
		3	33.0	8/1/24, 12:00 AM	8/2/24, 12:25 PM	36.42	HEAVY DOWN POUR/RAIN WATER LEAKAGE/ FLOOD IN RIVER
JKSPDC							
29	UPPER SINDH-II HPS	5	35.0	7/15/24, 12:00 AM	7/17/24, 8:15 PM	68.25	MISCELLANEOUS
NHPC							
30	URI-I HPS	2	120.0	7/26/24, 12:41 PM	7/27/24, 11:59 PM	35.32	GENERTOR
		4	120.0	10/16/24, 12:00 AM	10/18/24, 5:21 PM	65.35	TURBINE MINOR MAINT. WORKS
Western							
MPPGCL							
31	BANSAGAR TONS-I HPS	1	105.0	12/12/24, 12:00 AM	12/18/24, 7:30 PM	163.51	ABNORMAL SOUND
		2	105.0	10/25/24, 12:00 AM	10/30/24, 11:05 PM	143.09	VIBRATION/SOUND/ ALIGNMENT
		3	105.0	4/2/24, 6:45 AM	4/9/24, 12:15 PM	173.50	TURBINE MISC.
		3	105.0	5/27/24, 1:30 PM	6/1/24, 5:55 PM	124.41	GENERATOR MISCLLANEOUS MAINTENANCE

S.NO	STATION	UNIT	CAPACITY(MW)	DATE OD OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
32	BARGI HPS	1	45.0	4/17/24, 12:00 AM	4/21/24, 9:25 PM	117.42	GENEATOR TRANSFORMER /BUSHING OIL LEAKAGE
		1	45.0	5/6/24, 10:20 AM	5/8/24, 9:00 PM	58.67	MISCELLANEOUS
TATA MAH.							
33	BHIVPURI HPS	1	24.0	4/1/24, 11:01 PM	4/30/24, 11:59 PM	696.97	MISCELLANEOUS
		1	24.0	5/1/24, 12:00 AM	5/10/24, 7:40 PM	235.67	MISCELLANEOUS
MPPGCL							
34	GANDHI SAGAR HPS	1	23.0	3/13/25, 12:00 AM	3/14/25, 12:15 PM	36.27	GENEATOR TRANSFORMER MISC.
		3	23.0	4/1/24, 12:00 AM	3/31/25, 11:59 PM	8760.00	POWER HOUSE FLOODED
MAHAGENCO							
35	GHATGHAR PSS HPS	1	125.0	4/13/24, 3:00 PM	4/19/24, 7:10 PM	148.17	CONTROL SYSTEM PROBLEMS
		1	125.0	10/14/24, 11:30 PM	10/16/24, 5:10 AM	29.67	TURBINE SHAFT SEAL LEAK/BOLTS BROKEN
		1	125.0	10/31/24, 12:00 AM	11/3/24, 11:59 PM	96.00	GENEARTOR MISC.
		1	125.0	2/21/25, 4:55 AM	3/4/25, 10:05 PM	281.17	CONTROL SYSTEM PROBLEMS
NHDC							
36	INDIRA SAGAR HPS	2	125.0	10/8/24, 5:40 PM	10/11/24, 11:15 AM	65.58	MISCELLANEOUS
MAHAGENCO							
37	KOYNA-I&II HPS	1	70.0	8/24/24, 10:45 AM	8/25/24, 11:59 PM	37.25	NEEDLE PROBLEM
		5	80.0	8/23/24, 12:00 AM	10/16/24, 8:10 PM	1316.17	TURBINE BEARING TEMP. HIGH
		8	80.0	9/29/24, 12:00 AM	10/1/24, 11:55 PM	71.92	NEEDLE PROBLEM
		8	80.0	1/30/25, 12:00 AM	2/16/25, 3:50 PM	423.83	VIBRATIONS
MPPGCL							
38	MADHIKHERA HPS	1	20.0	10/26/24, 12:00 AM	11/4/24, 9:26 PM	237.44	ELECTRICAL FAULT
39	PENCH HPS	1	80.0	4/13/24, 1:28 PM	4/16/24, 10:35 AM	69.13	MIV LEAKAGE
		1	80.0	12/30/24, 2:05 PM	3/26/25, 12:15 AM	2050.18	PROTECTION OPERATION
40	RAJGHAT HPS	3	15.0	8/18/24, 12:00 AM	9/2/24, 4:14 AM	364.24	GEN. TRANSFORMER TRIPPING/ DAMAGED
SSNNL							
41	S SAROVAR CHPH HPS	2	50.0	1/12/25, 1:45 PM	1/14/25, 1:45 PM	48.00	MISCELLANEOUS
		4	50.0	6/1/24, 9:00 AM	6/24/24, 2:30 PM	557.50	MISCELLANEOUS
MAHAGENCO							
42	TILLARI HPS	1	60.0	4/29/24, 8:30 PM	7/15/24, 6:50 PM	1846.33	MISCELLANEOUS
GSECL							
43	UKAI HPS	4	75.0	9/5/24, 12:00 AM	11/15/24, 10:30 PM	1726.50	GENEARTOR MISC.
Southern							

S.NO	STATION	UNIT	CAPACITY(MW)	DATE OD OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
TANGEDCO							
44	ALIYAR HPS	1	60.0	9/20/24, 12:35 AM	9/21/24, 5:02 PM	40.45	MISCELLANEOUS
KPCL							
45	GERUSUPPA HPS	3	60.0	9/14/24, 6:02 AM	9/15/24, 6:15 AM	24.22	GOVERN.SYSTEM TROUB/EQPT. FAIL/EHG FAULT
KSEB							
46	IDAMALAYAR HPS	2	37.5	1/10/25, 6:09 PM	1/11/25, 8:21 PM	26.21	MISCELLANEOUS
		2	37.5	1/21/25, 10:15 AM	1/22/25, 5:36 PM	31.35	MISCELLANEOUS
47	IDUKKI HPS	1	130.0	4/1/24, 12:00 AM	5/22/24, 4:51 PM	1240.85	WINDING/OIL TEMP.
		1	130.0	10/12/24, 9:20 AM	10/17/24, 5:42 PM	128.37	MISCELLANEOUS
		3	130.0	10/9/24, 9:09 PM	10/11/24, 11:59 PM	50.85	GENEARTOR MISC.
		4	130.0	7/2/24, 8:30 PM	7/3/24, 10:53 PM	26.38	TURBINE GOVERNING SYS. FAILURE
		4	130.0	7/23/24, 5:46 AM	7/26/24, 7:37 PM	85.85	FURNACE FIRE OUT /FLAME FAILURE
		4	130.0	2/18/25, 4:55 PM	2/19/25, 7:55 PM	27.00	GOVERN.SYSTEM TROUB/EQPT. FAIL/EHG FAULT
		5	130.0	1/24/25, 9:15 AM	2/4/25, 4:27 PM	271.20	WATER CONDCUTOR SYSTEM
		6	130.0	7/23/24, 6:02 AM	7/26/24, 7:10 PM	85.13	H.P. AND L.P. bypass system
		6	130.0	2/3/25, 8:22 AM	2/4/25, 4:11 PM	31.82	SWITCHYARD MISCELLANOUS.
KPCL							
48	JOG HPS	2	13.2	4/1/24, 12:00 AM	6/28/24, 3:50 PM	2127.83	DC SUPPLY PROBLEM
		2	13.2	9/23/24, 12:00 AM	10/3/24, 11:30 AM	251.50	STATOR EARTH FAULT
		6	21.6	1/14/25, 12:00 AM	1/17/25, 1:15 PM	85.25	EXCITATION SYSTEM FAILURE
		8	21.6	9/17/24, 12:00 AM	9/24/24, 11:45 AM	179.75	TRIPPING--EQUIP.DAMAGED
		8	21.6	11/2/24, 11:30 AM	11/11/24, 4:10 PM	220.67	GENERATOR TRANSFORMER
TANGEDCO							
49	KADAMPARI HPS	1	100.0	4/1/24, 12:00 AM	3/31/25, 11:59 PM	8760.00	RUNNER
KPCL							
50	KALINADI HPS	3	150.0	10/1/24, 2:49 PM	10/27/24, 11:59 PM	633.17	GENEATOR TRANSFORMER /BUSHING OIL LEAKAGE
		5	150.0	5/19/24, 12:47 AM	6/14/24, 11:58 PM	647.18	MIV LEAKAGE
TANGEDCO							
51	KODAYAR-II HPS	2	40.0	7/15/24, 12:20 AM	7/16/24, 12:20 AM	24.00	THRUST BEARING TEMP. HIGH
		2	40.0	11/24/24, 2:25 PM	11/26/24, 3:05 PM	48.67	EXCITATION CABLES PROBLEMS
KSEB							
52	KUTTIYADI ADDL EXTN	1	50.0	9/22/24, 3:45 PM	9/23/24, 9:25 PM	29.67	UGB OIL SYSTEM PROBLEM

S.NO	STATION	UNIT	CAPACITY(MW)	DATE OD OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
		1	50.0	1/10/25, 9:50 AM	1/17/25, 7:06 PM	177.27	MIV SERVO MOTOR [PROBLEM
53	LOWER PERIYAR HPS	1	60.0	12/29/24, 9:10 AM	1/8/25, 6:31 PM	249.35	UGB COOLING SYSTEM PROBLEM
		2	60.0	12/29/24, 9:10 AM	1/3/25, 11:59 PM	134.83	MISCELLANEOUS
APGENCO							
54	LOWER SILERU HPS	2	115.0	9/11/24, 8:17 PM	12/16/24, 10:04 PM	2305.78	GENERATOR TRANSFORMER BUCHOLTZ
		2	115.0	2/13/25, 9:45 AM	2/20/25, 12:05 AM	158.34	GENEATOR TRANSFORMER MISC.
TANGEDCO							
55	MOYAR HPS	1	12.0	1/20/25, 7:45 AM	1/21/25, 2:11 PM	30.43	MISCELLANEOUS
TSGENCO							
56	NAGARJUN SGR HPS	2	100.8	4/1/24, 12:00 AM	1/8/25, 5:20 AM	6773.33	VIBRATIONS
57	NAGARJUN SGR LBC HPS	1	30.0	8/31/24, 8:04 PM	9/20/24, 11:15 AM	471.18	HEAVY DOWN POUR/RAIN WATER LEAKAGE/ FLOOD IN RIVER
		2	30.0	9/7/24, 11:30 PM	9/9/24, 12:00 AM	24.50	HEAVY DOWN POUR/RAIN WATER LEAKAGE/ FLOOD IN RIVER
		2	30.0	12/12/24, 12:00 AM	12/20/24, 11:59 PM	215.98	TURBINE MISC.
KSEB							
58	NARIAMANGLAM HPS	1	17.55	4/3/24, 6:45 PM	4/14/24, 12:00 AM	245.25	EXCT. FAIL/LOSS OF EXCITATION /MISC. PROB.
		1	17.55	4/14/24, 10:03 PM	4/18/24, 12:06 AM	74.05	PRESSURE RELIEF VALVE PROBLEM
TANGEDCO							
TANGEDCO							
59	PARSON`S VALLEY HPS	1	30.0	8/30/24, 10:15 AM	8/31/24, 4:30 PM	30.25	MISCELLANEOUS
KSEB							
60	PORINGALKUTTU HPS	2	8.0	12/9/24, 9:00 AM	12/12/24, 8:37 PM	83.62	VIBRATIONS
		3	8.0	6/1/24, 5:29 PM	6/3/24, 2:41 PM	45.20	NEUTRAL GROUNDING/SURGE PROT. EQUIP.PROB.
		4	8.0	3/28/25, 12:05 AM	3/29/25, 8:26 PM	44.35	MAIN INLET VALVE PROBLEM
TSGENCO							
61	PRIYADARSHNI JURALA HPS	3	39.0	4/1/24, 12:00 AM	3/31/25, 11:59 PM	8760.00	STATOR
		6	39.0	4/1/24, 12:00 AM	7/18/24, 12:00 AM	2592.00	RUNNER
62	PULICHINTALA HPS	3	30.0	4/1/24, 12:00 AM	8/7/24, 4:14 AM	3076.23	TURBINE SHAFT SEAL WORK/REPLACMEENT
TANGEDCO							
63	PYKARA HPS	1	7.0	5/1/24, 12:00 AM	3/31/25, 12:00 AM	8016.00	MISCELLANEOUS
		2	7.0	4/26/24, 6:45 AM	4/30/24, 12:00 AM	89.25	MISCELLANEOUS
		2	7.0	5/1/24, 12:00 AM	5/22/24, 5:10 PM	521.17	MISCELLANEOUS
		2	7.0	6/20/24, 4:30 PM	6/30/24, 12:00 AM	223.50	MISCELLANEOUS
		2	7.0	7/1/24, 12:00 AM	7/2/24, 8:10 PM	44.17	MISCELLANEOUS

S.NO	STATION	UNIT	CAPACITY(MW)	DATE OD OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
		2	7.0	7/11/24, 11:40 PM	7/13/24, 4:05 PM	40.42	MISCELLANEOUS
		2	7.0	8/5/24, 8:00 PM	8/19/24, 11:00 AM	327.00	MISCELLANEOUS
		2	7.0	8/22/24, 7:30 PM	8/27/24, 8:15 PM	120.75	MISCELLANEOUS
		2	7.0	11/26/24, 7:05 PM	11/28/24, 1:10 PM	42.08	MISCELLANEOUS
		2	7.0	2/7/25, 9:30 AM	2/16/25, 4:34 PM	223.07	MISCELLANEOUS
		2	7.0	2/25/25, 10:30 AM	2/28/25, 12:00 AM	61.50	MISCELLANEOUS
		2	7.0	3/1/25, 12:00 AM	3/9/25, 8:00 AM	200.00	MISCELLANEOUS
		3	7.0	8/12/24, 6:45 PM	8/13/24, 9:00 PM	26.25	MISCELLANEOUS
		3	7.0	8/27/24, 12:00 PM	8/28/24, 5:00 PM	29.00	MISCELLANEOUS
		3	7.0	10/15/24, 6:00 AM	10/31/24, 12:00 AM	378.00	MISCELLANEOUS
		3	7.0	11/1/24, 12:00 AM	11/8/24, 4:25 PM	184.42	MISCELLANEOUS
		5	13.6	10/10/24, 3:07 AM	10/18/24, 5:25 PM	206.30	MISCELLANEOUS
		6	11.0	4/1/24, 12:00 AM	3/31/25, 12:00 AM	8736.00	MISCELLANEOUS
64	PYKARA ULTMATE HPS	1	50.0	10/13/24, 8:05 PM	10/21/24, 6:35 PM	190.50	TURBINE MISC.
KSEB							
65	SABARIGIRI HPS	3	50.0	10/29/24, 11:25 AM	10/30/24, 5:00 PM	29.58	DEFLECTOR MECH. PROBLEM/OIL LEAKAGE
TANGEDCO							
66	SARKARPATHY HPS	1	30.0	2/20/25, 6:10 PM	2/28/25, 11:59 PM	197.82	MISCELLANEOUS
		1	30.0	3/1/25, 12:00 AM	3/5/25, 5:45 PM	113.75	MISCELLANEOUS
KSEB							
67	SENGULAM HPS	1	12.0	5/20/24, 5:40 PM	5/21/24, 6:03 PM	24.39	EXCITATION SYSTEM FAILURE
KPCL							
68	SHARAVATHI HPS	10	103.5	9/20/24, 8:56 AM	9/21/24, 6:20 PM	33.41	GENERATOR MAINTENANCE WORK
		10	103.5	2/23/25, 12:46 PM	2/25/25, 4:20 PM	51.57	GENEARTOR MISC.
		6	103.5	11/6/24, 1:38 PM	11/12/24, 4:18 PM	146.67	AVR PROBLEM/TRIPPED
		8	103.5	10/11/24, 12:00 AM	10/12/24, 8:28 PM	44.47	STATOR EARTH FAULT
APGENCO							
69	SRISAILAM HPS	6	110.0	7/31/24, 8:39 AM	8/1/24, 11:45 AM	27.10	GENERATOR PROTECTION RELAY OPERATION PROBLEM
		7	110.0	7/26/24, 2:00 PM	8/8/24, 10:04 PM	320.07	TURBINE BEARING ALIGNMENT PROBLEM
TSGENCO							
70	SRISAILAM LB HPS	4	150.0	4/1/24, 12:00 AM	8/8/24, 10:34 PM	3118.57	EXCT. FAIL/LOSS OF EXCITATION /MISC. PROB.
APGENCO							

S.NO	STATION	UNIT	CAPACITY(MW)	DATE OD OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
71	UPPER SILERU HPS	1	60.0	8/1/24, 12:00 AM	11/6/24, 8:29 PM	2348.48	MISCELLANEOUS
		4	60.0	8/1/24, 12:00 AM	8/8/24, 11:24 AM	179.40	TRIPPING--EQUIP.DAMAGED
KPCL							
72	VARAHI HPS	1	115.0	5/19/24, 12:13 PM	10/27/24, 11:59 PM	3875.78	STATOR EARTH FAULT
		3	115.0	8/30/24, 3:30 PM	10/14/24, 5:52 PM	1082.37	NEEDLE PROBLEM
Eastern							
OHPC							
73	BALIMELA HPS	2	60.0	4/1/24, 12:00 AM	9/1/24, 12:00 AM	3672.00	MISCELLANEOUS
WBSEDCL							
74	JALDHAKA HPS ST-I	1	9.0	4/1/24, 12:00 AM	3/31/25, 11:59 PM	8760.00	RAW WATER LOW IN INTAKE CANAL
		4	9.0	4/1/24, 12:00 AM	3/31/25, 11:59 PM	8760.00	RAW WATER LOW IN INTAKE CANAL
APGENCO							
75	MACHKUND HPS	1	17.0	4/2/24, 7:10 PM	8/31/24, 11:30 AM	3616.33	MISCELLANEOUS
		1	17.0	9/9/24, 9:00 AM	9/13/24, 12:30 PM	99.50	TRIPPING--EQUIP.DAMAGED
		1	17.0	10/1/24, 12:00 AM	10/2/24, 6:00 PM	42.00	TRIPPING--EQUIP.DAMAGED
		1	17.0	10/2/24, 9:35 PM	10/5/24, 11:45 AM	62.17	TRIPPING--EQUIP.DAMAGED
		2	17.0	4/1/24, 12:00 AM	11/22/24, 1:10 PM	5653.17	TRIPPING--EQUIP.DAMAGED
		2	17.0	12/6/24, 12:00 PM	12/20/24, 7:40 PM	343.67	TRIPPING--EQUIP.DAMAGED
		2	17.0	1/1/25, 12:00 AM	1/16/25, 4:30 PM	376.50	TRIPPING--EQUIP.DAMAGED
		2	17.0	1/29/25, 7:55 PM	2/1/25, 7:55 PM	72.00	TRIPPED DUE TO VARIATION IN SPEED
		4	21.25	5/27/24, 11:30 AM	6/1/24, 12:00 AM	108.50	MISCELLANEOUS
		4	21.25	9/9/24, 10:32 AM	10/1/24, 12:00 AM	517.47	MISCELLANEOUS
		4	21.25	10/1/24, 12:00 AM	10/7/24, 8:25 PM	164.42	MISCELLANEOUS
		4	21.25	12/6/24, 9:05 AM	12/10/24, 10:00 PM	108.92	MISCELLANEOUS
		4	21.25	1/1/25, 12:00 AM	3/31/25, 11:59 PM	2160.00	TRIPPING--EQUIP.DAMAGED
		5	21.25	4/1/24, 12:00 AM	3/1/25, 12:00 AM	8016.00	MISCELLANEOUS
		5	21.25	3/10/25, 12:00 AM	3/31/25, 11:59 PM	528.00	MISCELLANEOUS
		6	21.25	9/9/24, 10:30 AM	9/20/24, 6:55 PM	272.42	TRIPPING--EQUIP.DAMAGED
		6	21.25	2/21/25, 10:05 PM	2/25/25, 6:50 PM	92.75	TRIPPING--EQUIP.DAMAGED
DVC							
76	MAITHON HPS	2	23.2	9/13/24, 11:20 AM	9/14/24, 7:16 PM	31.93	GOVERN.SYSTEM TROUB/EQPT. FAIL/EHG FAULT
WBSEDCL							

S.NO	STATION	UNIT	CAPACITY(MW)	DATE OD OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
77	RAMMAM HPS	4	12.5	10/4/24, 12:00 AM	10/14/24, 12:28 PM	252.48	ABNORMAL SOUND
OHPC							
78	RENGALI HPS	5	50.0	3/22/25, 12:00 AM	3/28/25, 1:23 PM	157.38	MISCELLANEOUS ELECTRICAL WORKS
JUUNL							
79	SUBERNREKHA-II HPS	2	65.0	8/21/24, 9:40 PM	8/26/24, 10:40 PM	121.00	MISCELLANEOUS
		2	65.0	8/26/24, 11:25 PM	9/1/24, 11:47 AM	132.37	MISCELLANEOUS
NHPC							
80	TEESTA LOW DAM-III HPS	3	33.0	1/29/25, 3:28 PM	2/10/25, 6:40 PM	291.20	MISCELLANEOUS ELECTRICAL WORKS
81	TEESTA LOW DAM-IV HPS	3	40.0	8/14/24, 2:25 PM	8/15/24, 11:04 PM	32.65	FAILURE LIGHTING ARRESTER
OHPC							
82	UPPER INDRAVATI HPS	1	150.0	1/12/25, 1:35 PM	1/17/25, 5:22 PM	123.80	GOVERN.SYSTEM TROUB/EQPT. FAIL/EHG FAULT
		3	150.0	1/12/25, 12:00 AM	3/20/25, 5:52 PM	1625.87	MAIN INLET VALVE
North Eastern							
NEEPCO.							
83	KAMENG HPS	1	150.0	6/10/24, 3:03 AM	6/11/24, 11:59 PM	44.95	MISCELLANEOUS
		2	150.0	6/30/24, 12:00 AM	7/5/24, 11:59 PM	144.00	ROTOR MISC. FAULTS
84	KOPILI HPS	1	50.0	4/1/24, 12:00 AM	5/5/24, 11:59 PM	840.00	PENSTOCK LEAKAGE
		1	50.0	5/6/24, 12:00 AM	5/10/24, 11:59 PM	120.00	PENSTOCK LEAKAGE
MeECL							
85	KYRDEMKULAI HPS	1	30.0	5/8/24, 12:00 AM	5/10/24, 11:59 AM	59.98	LEAKAGE OIL VENT PIPE
		1	30.0	8/23/24, 12:00 AM	9/19/24, 3:23 PM	663.38	TURBINE BEARING PROBLEM
		2	30.0	5/8/24, 12:00 AM	5/10/24, 11:59 AM	59.98	LEAKAGE OIL VENT PIPE
		2	30.0	8/26/24, 12:00 AM	8/27/24, 11:10 AM	35.17	MISCELLANEOUS
		2	30.0	11/19/24, 12:00 AM	11/21/24, 6:00 PM	66.00	MISCELLANEOUS
NHPC							
86	LOKTAK HPS	3	35.0	2/18/25, 5:00 PM	2/21/25, 11:59 PM	79.00	TURBINE VIBRATION HIGH
MeECL							
87	MYNTDU(LESHKA) St-1 HPS	1	42.0	12/1/24, 12:00 AM	12/2/24, 5:30 PM	41.50	MISCELLANEOUS
		1	42.0	1/21/25, 12:00 AM	1/22/25, 5:30 PM	41.50	GENERATOR CT PT PROBLEM
		2	42.0	6/16/24, 12:00 AM	6/17/24, 6:20 PM	42.33	SYNCHORNISING PROBLEMS
		2	42.0	7/5/24, 12:00 AM	7/6/24, 12:00 AM	24.00	BUS COUPLER BREAKER
		2	42.0	12/1/24, 12:00 AM	12/2/24, 5:00 PM	41.00	MISCELLANEOUS

S.NO	STATION	UNIT	CAPACITY(MW)	DATE OD OUTAGE	DATE OF RETURN	OUTAGE HOURS	REASONS
		2	42.0	2/14/25, 12:00 AM	2/17/25, 6:00 PM	90.00	MISCELLANEOUS
88	NEW UMTRU HPS	2	20.0	3/12/25, 12:00 AM	3/13/25, 4:00 PM	40.00	MISCELLANEOUS
NEEPCO.							
89	RANGANADI HPS	3	135.0	12/9/24, 1:00 PM	12/10/24, 3:00 PM	26.00	STATOR
MeECL							
90	UMIAM HPS ST-I	1	9.0	11/13/24, 12:00 AM	11/15/24, 7:00 PM	67.00	VARIOUS MAINTENANCE WORKS
		2	9.0	11/13/24, 12:00 AM	11/15/24, 7:00 PM	67.00	VARIOUS MAINTENANCE WORKS
		3	9.0	4/1/24, 12:00 AM	5/17/24, 11:59 PM	1127.98	GENEATOR TRANSFORMER MISC.
		3	9.0	11/13/24, 12:00 AM	11/15/24, 7:00 PM	67.00	VARIOUS MAINTENANCE WORKS
		4	9.0	11/13/24, 12:00 AM	11/15/24, 7:00 PM	67.00	VARIOUS MAINTENANCE WORKS
91	UMIAM HPS ST-IV	7	30.0	4/29/24, 12:00 AM	9/2/24, 4:05 AM	3028.08	ROTOR MISC. FAULTS
		8	30.0	11/8/24, 12:00 AM	11/9/24, 7:00 AM	31.00	MISCELLANEOUS
		8	30.0	3/5/25, 12:00 AM	3/29/25, 11:59 PM	599.98	GENEATOR TRANSFORMER MISC.

CHAPTER-6

OPERATING AVAILABILITY OF HE UNITS

CHAPTER-6

OPERATING AVAILABILITY OF HE UNITS

6.1 Based on the analysis of data received from the utilities regarding planned maintenance undertaken and forced outages at 741 Hydro Generating units of 216 H.E. Stations comprising of 47728.17 MW, operating availability of various units and stations has been computed. During the year 2024-25, the average operating availability of hydro generating units on all India basis was 90.74% as compared to 91.51% during 2023-24.

The station-wise/unit-wise non-availability due to Planned Maintenance (P.M) and Forced Outages (F.O) and overall operating availability of various H.E. Stations in the country is indicated in **Annex-6.1**. The station-wise details are also graphically depicted in **Exhibits from 6.1 to 6.14**.

6.2 The number of H.E. Stations falling under various ranges of operating availability during the year 2024-25 is summarized below in **Table 6.1.**

TABLE 6.1

OPERATING AVAILABILITY OF H.E. STATIONS
(PERIOD: 2024-25)

Operating Availability (%)	No. of Stations	% of total Stations	Installed Capacity (MW)	% of total Installed Capacity
>=95%	103	47.69	24510.42	51.35
>=90 to 95	55	25.46	12375.00	25.93
>=85 to 90	23	10.65	4569.05	9.57
>=80 to 85	9	4.17	2670.00	5.59
<80	26	12.04	3603.70	7.55
Total	**216**	**100.00**	**47728.17**	**100.00**

6.3 OPERATING AVAILABILITY – REGION-WISE

Region-wise operating availability of hydro-electric units during 2024-25 is indicated in **Table 6.2**.

TABLE 6.2

AVAILABILITY OF UNITS - REGION-WISE
PERIOD: 2024-25

Sl. No.	Region	No. of Units	Installed Capacity (MW)	Planned Maintenance %	Forced Outage %	Operating Availability (%)
1	Northern	266	20474.27	6.68	1.66	91.65
2	Western	101	7392.00	5.14	2.27	92.60
3	Southern	250	11847.15	5.90	3.36	90.73
4	Eastern	86	5987.75	8.91	6.17	84.93
5	N- Eastern	38	2027.00	10.38	5.02	84.60
	All India	**741**	**47728.17**	**6.66**	**3.02**	**90.74**

It is seen that the operating availability of hydel generating units during 2024-25 was the highest (92.60%) in Western Region due to relatively lower forced outages. The operating availability was the lowest in case of units in North-Eastern Region (84.60%) due to high planned maintenance and forced outages.

6.4 OPERATING AVAILABILITY: AGE-WISE

The average operating availability during 2024-25 of hydro units commissioned in various years has been indicated in **Table 6.3**. It is observed that units commissioned during 2024-24, 2022-23 & 2019-20 have achieved the highest operating availability of 100.00%. Operating availability was more than 90% for all the other years (i.e. year of commissioning from 1989-90 to 2018-19, 2020-21 to 2021-22 & 2024-25).

TABLE - 6.3

OPERATING AVAILABILITY – AGE-WISE
PERIOD: 2024-25

Sl. No.	Year of Commissioning	No. of Units	Installed Capacity (MW)	Operating Availability (%)
1	2024-25	10	799.99	96.06
2	2023-24	2	60.00	100.00
3	2022-23	2	120.00	100.00
4	2021-22	7	393.00	99.23
5	2020-21	8	510.00	99.97
6	2019-20	2	300.00	100.00
7	2018-19	3	140.00	99.99
8	2017-18	16	795.00	97.36
9	2016-17	18	1659.00	99.41
10	2015-16	17	1516.00	99.01
11	2010-11 to 2014-15	63	4482.02	90.20
12	2005-06 to 2009-10	66	7077.00	94.65
13	2000-01 to 2004-05	74	6741.80	94.48

14	1989-90 to 1999-2000	86	5769.70	90.47
15	1978-79 to 1988-89	124	5279.75	86.37
16	1967-68 to 1977-78	81	4780.80	87.32
17	Up to 1966-67	162	4780.80	87.32
	Total	**741**	**47728.17**	**92.22**

6.5 OPERATING AVAILABILITY – UTILITY-WISE

Sector-wise/State & Private Power Generating Corporation-wise operating availability of HE units is indicated in **Table 6.4**.

It was observed that the operating availability of generating units of Central Sector was the highest (90.71%) followed by State Sector (90.40%) and Private Sector (88.52%).

TABLE 6.4

SECTOR-WISE OPERATING AVAILABILITY OF UTILITIES FOR PERIOD: 2024-25

S. No.	Organization	No. of Units	Installed Capacity	Planned Maintenance	Forced Outage	Operating Availability per Unit
			(MW)	(%)	(%)	(%)
Central						
1	BBMB	28	2956.30	9.12	0.29	90.58
2	DVC	5	143.20	6.74	0.14	93.11
3	NEEPCO.	20	1500.00	15.13	5.86	79.01
4	NHDC	16	1520.00	3.78	0.06	96.15
5	NHPC	73	6051.20	8.97	0.39	90.64
6	NTPC Ltd.	4	800.00	0.99	1.54	97.47
7	SJVNL	14	1972.02	1.33	0.08	98.59
8	THDC	8	1400.00	8.57	0.00	91.43
Sub Total (CS)		**168**	**16342.72**	**8.31**	**0.98**	**90.71**
State						
1	APGCL	2	100.00	3.14	0.15	96.71
2	APGENCO	34	1796.75	0.63	9.26	90.12
3	BCPCL	3	99.99	0	0	100.00
3	CSPGCL	3	99.99	0.00	0.00	100.00
4	GSECL	3	120.00	0.00	0.00	100.00
5	HPPCL	8	540.00	0.00	2.46	97.54
6	HPSEB	8	406.00	2.61	0.89	96.50
7	JKSPDC	12	372.00	1.44	10.42	88.14

8	JUUNL	12	1110.00	19.37	0.07	80.56
9	KPCL	2	130.00	6.63	1.72	91.66
10	KSEB	66	3617.20	10.25	1.69	88.06
11	MAHAGENCO	51	1964.15	8.61	0.86	90.52
12	MeECL	24	2406.00	4.38	2.08	93.54
13	MPPGCL	13	322.00	6.21	5.52	88.28
14	OHPC	23	875.00	1.84	6.11	92.05
15	PSPCL	31	2039.80	9.47	2.05	88.48
16	RRVUNL	25	1051.00	2.43	0.25	97.31
17	SSNNL	11	411.00	1.72	7.68	90.60
18	TANGEDCO	11	1450.00	0.81	0.64	98.55
19	TSGENCO	69	2178.20	5.30	4.80	89.90
20	TUL	36	2405.60	0.00	7.98	92.02
21	UJVNL	6	1200.00	0.00	0.00	100.00
22	UPJVNL	36	1372.15	11.61	3.67	84.72
23	WBSEDCL	15	501.60	1.99	0.53	97.47
Sub Total (State)		**513**	**27454.44**	**5.64**	**3.96**	**90.40**
Private						
1	ADHPL	2	192.00	6.47	7.82	85.71
2	AHPC (GVK)	4	330.00	1.68	0.00	98.32
3	DEPL	2	96.00	11.99	0.14	87.87
4	DLHP	1	34.00	0.00	0.02	99.98
5	E.P.P.L.	2	100.00	0.10	0.26	99.64
6	GBHPPL	2	70.00	3.75	0.00	96.25
7	GIPL	2	110.00	6.33	0.19	93.48
8	GMR BHHPL	3	180.00	5.17	0.00	94.83
9	HBPCL	7	1345.00	2.68	0.10	97.22
10	HSPCL	2	100.00	2.40	0.00	97.60
11	IAEPL	3	36.00	8.70	0.00	91.30
12	JPPVL	4	400.00	0.59	0.09	99.33
13	L&T	3	99.00	10.97	0.61	88.42
14	MBPC	2	113.00	9.69	0.22	90.09
15	MPCL	2	86.00	5.12	6.52	88.35
16	SEPL	2	97.00	2.57	0.00	97.43
17	SKPPPL	2	96.00	72.00	0.00	28.00
18	TATA MAH.	15	447.00	20.13	0.71	79.16
Sub Total (Pvt.)		**60**	**3931.00**	**10.75**	**0.73**	**88.52**

Grand Total	**741**	**47728.17**	**6.25**	**3.01**	**90.74**

6.6 OPERATING AVAILABILITY BELOW 90%- STATION-WISE

It is observed that 10 nos. of stations had operating availability below 90% continuously for last 3 years. The details of these stations is given below in **Table 6.5.** As normative availability factor for entire useful life of station considered during planning stage is 95%, the stations/utilities having lower operating availability factor need to improve their O&M practices to bring down the outages as per best practices.

TABLE-6.5

OPERATING AVAILABILITY OF H. E. STATIONS CONTINUOUSLY LESS THAN 90% DURING LAST THREE YEARS (2022-23 To 2024-25)

Sl. No.	Name of the Stations	Name of the Utility	Installed Capacity (MW)	Operating Availability (%)		
				2022-23	2023-24	2024-25
1	ALLAIN DUHANGAN HPS	ADHPL	192.00	86.73	87.44	85.71
2	BAGLIHAR HPS	JKSPDC	450.00	82.70	88.73	88.76
3	GANDHI SAGAR HPS	MPPGCL	115.00	80.00	78.87	79.37
4	IDUKKI HPS	KSEB	780.00	88.05	87.20	88.38
5	KADAMPARI HPS	TANGEDCO	400.00	77.83	56.35	75.00
6	KAMENG HPS	NEEPCO.	600.00	83.08	85.88	72.94
7	KHONDONG HPS	NEEPCO.	50.00	0.00	8.83	1.64
8	KHOPOLI HPS	TATA MAH.	72.00	66.67	63.15	33.33
9	NARIAMANGLAM HPS	KSEB	52.65	87.03	87.73	86.63
10	R P SAGAR HPS	RRVUNL	172.00	49.80	70.62	74.18

EXHIBIT 6.1

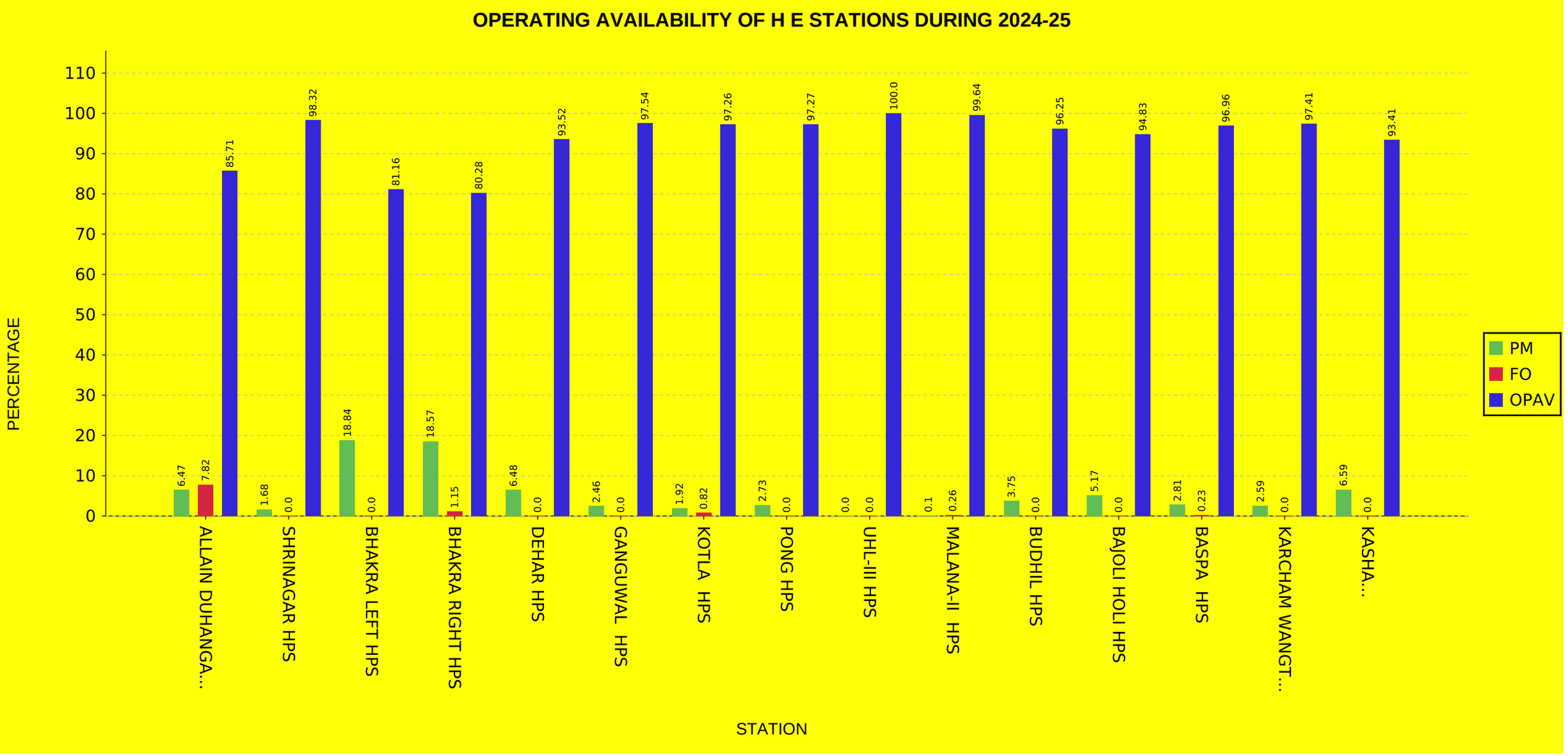

OPERATING AVAILABILITY OF H E STATIONS DURING 2024-25
PERCENTAGE
0
10
20
30
40
50
60
70
80
90
100
110
6.47
7.82
85.71
1.68
0.0
98.32
18.84
0.0
81.16
18.57
1.15
80.28
6.48
0.0
93.52
2.46
0.0
97.54
1.92
0.82
97.26
2.73
0.0
97.27
0.0
0.0
100.0
0.1
0.26
99.64
3.75
0.0
96.25
5.17
0.0
94.83
2.81
0.23
96.96
2.59
0.0
97.41
6.59
0.0
93.41
ALLAIN DUHANGA...
SHRINAGAR HPS
BHAKRA LEFT HPS
BHAKRA RIGHT HPS
DEHAR HPS
GANGUWAL HPS
KOTLA HPS
PONG HPS
UHL-III HPS
MALANA-II HPS
BUDHIL HPS
BAJOLI HOLI HPS
BASPA HPS
KARCHAM WANGT...
KASHA...
PM
FO
OPAV
STATION

EXHIBIT 6.2

OPERATING AVAILABILITY OF H E STATIONS DURING 2024-25

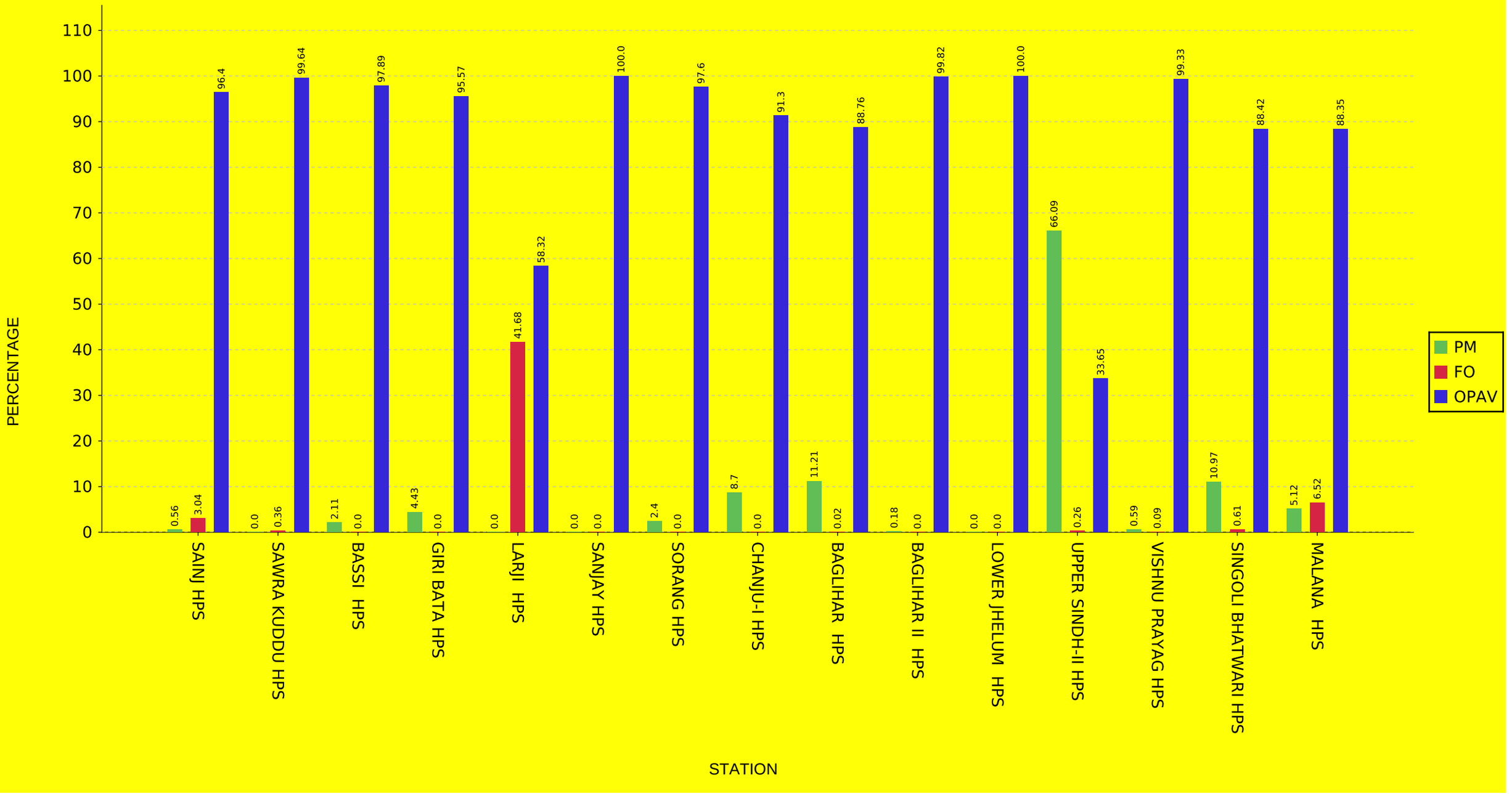
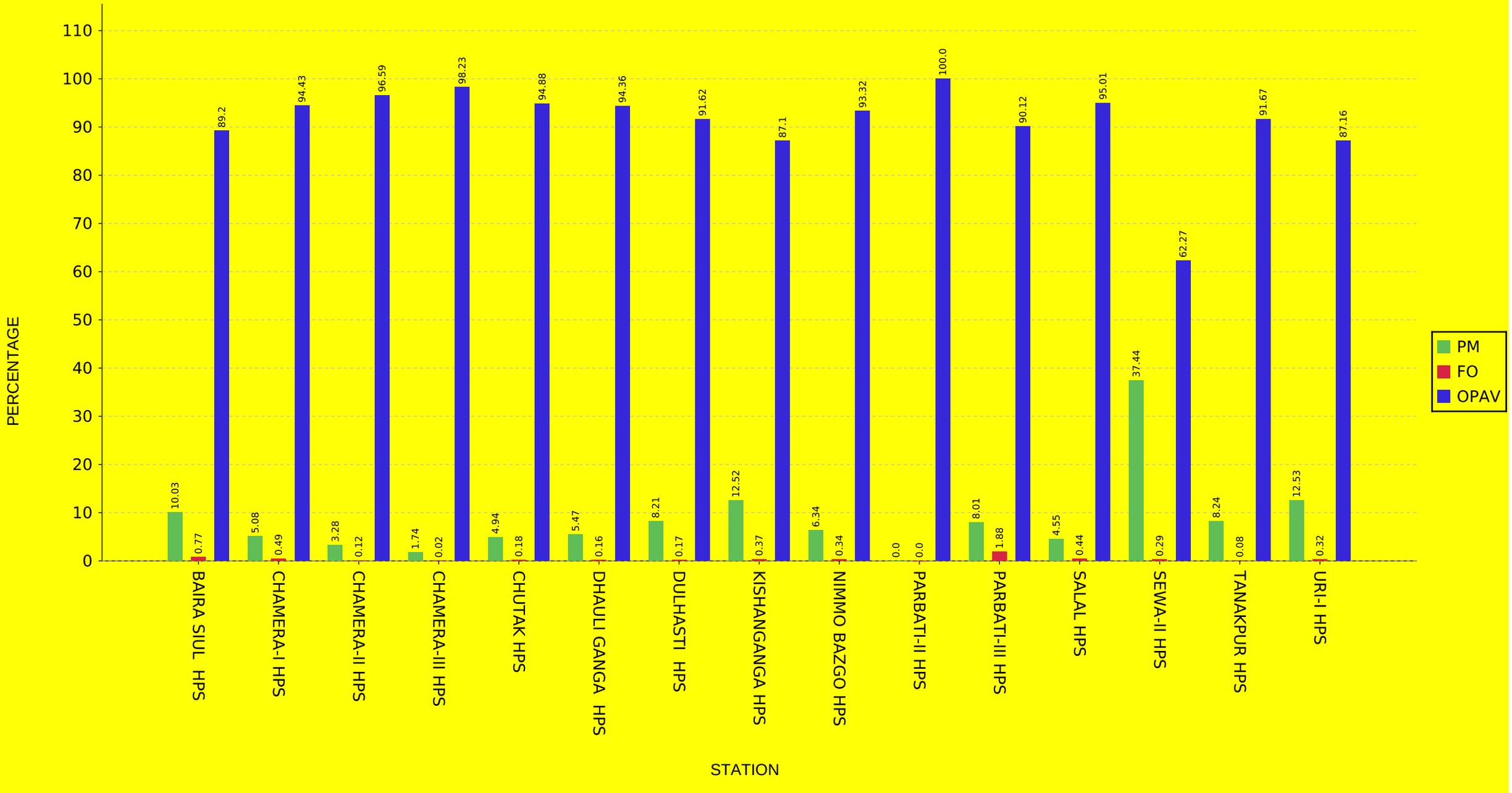


EXHIBIT 6.3

OPERATING AVAILABILITY OF H E STATIONS DURING 2024-25



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OPERATING AVAILABILITY OF H E STATIONS DURING 2024-25

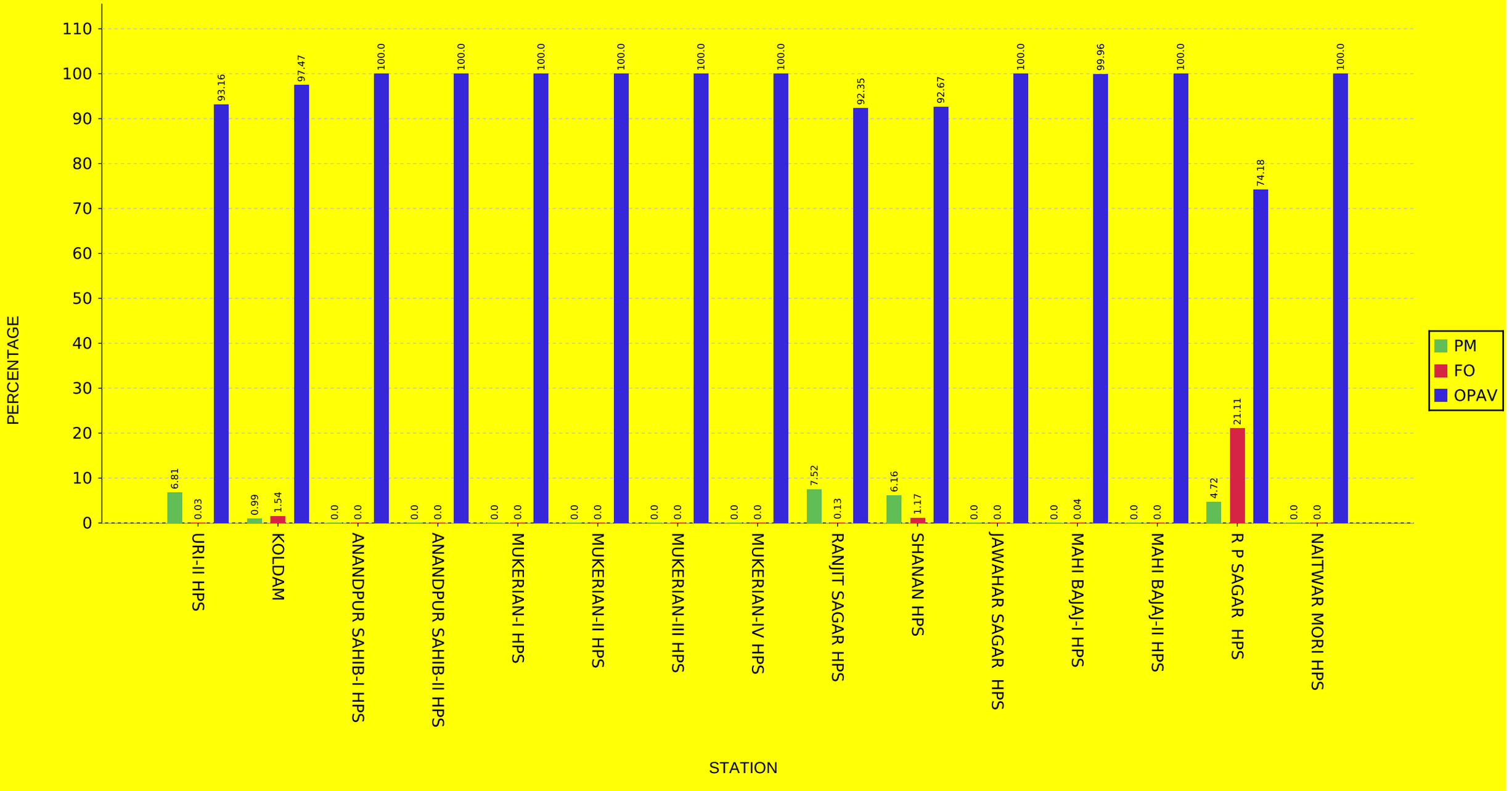


EXHIBIT 6.5

OPERATING AVAILABILITY OF H E STATIONS DURING 2024-25

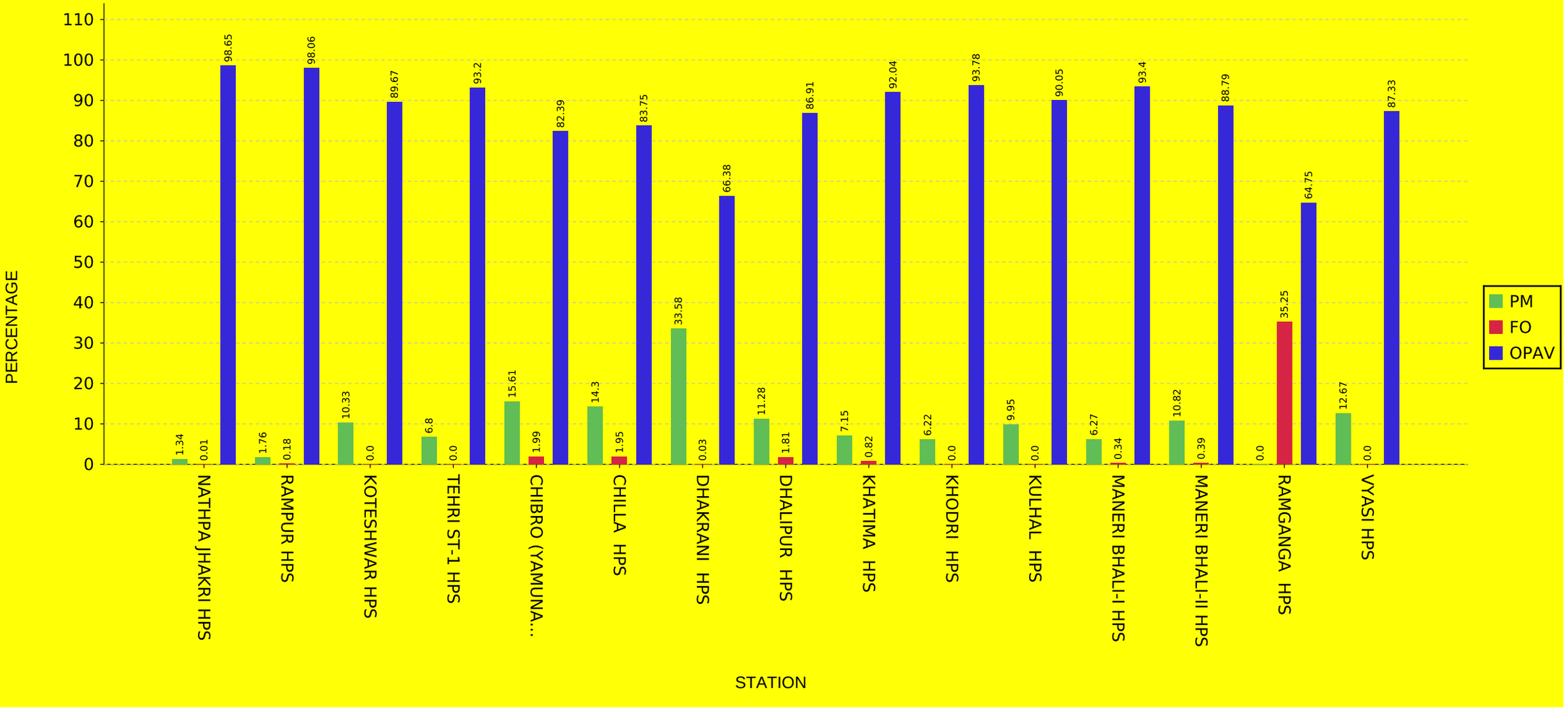


EXHIBIT 6.6

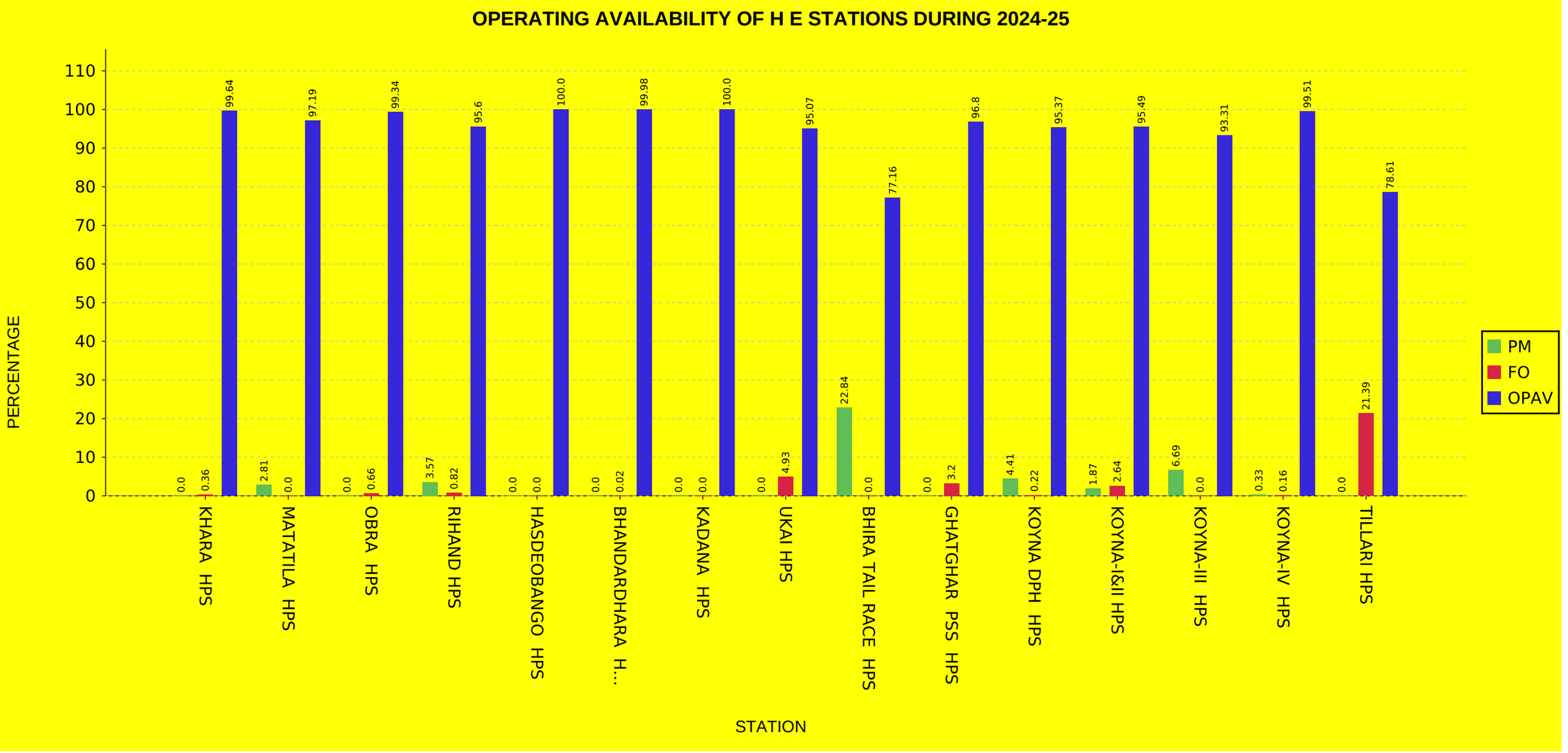

OPERATING AVAILABILITY OF H E STATIONS DURING 2024-25
PERCENTAGE
0
10
20
30
40
50
60
70
80
90
100
110
0.0
0.36
99.64
2.81
0.0
97.19
0.0
0.66
99.34
3.57
0.82
95.6
0.0
0.0
100.0
0.0
0.02
99.98
0.0
0.0
100.0
0.0
4.93
95.07
22.84
0.0
77.16
0.0
3.2
96.8
4.41
0.22
95.37
1.87
2.64
95.49
6.69
0.0
93.31
0.33
0.16
99.51
0.0
21.39
78.61
KHARA HPS
MATATILA HPS
OBRA HPS
RIHAND HPS
HASDEOBANGO
BHANDARDHARA
KADANA HPS
UKAI HPS
BHIRA TAIL RACE
GHATGHAR PSS
KOYNA DPH HPS
KOYNA-I&II HPS
KOYNA-III HPS
KOYNA-IV HPS
TILLARI HPS
STATION
PM
FO
OPAV

EXHIBIT 6.7

OPERATING AVAILABILITY OF H E STATIONS DURING 2024-25

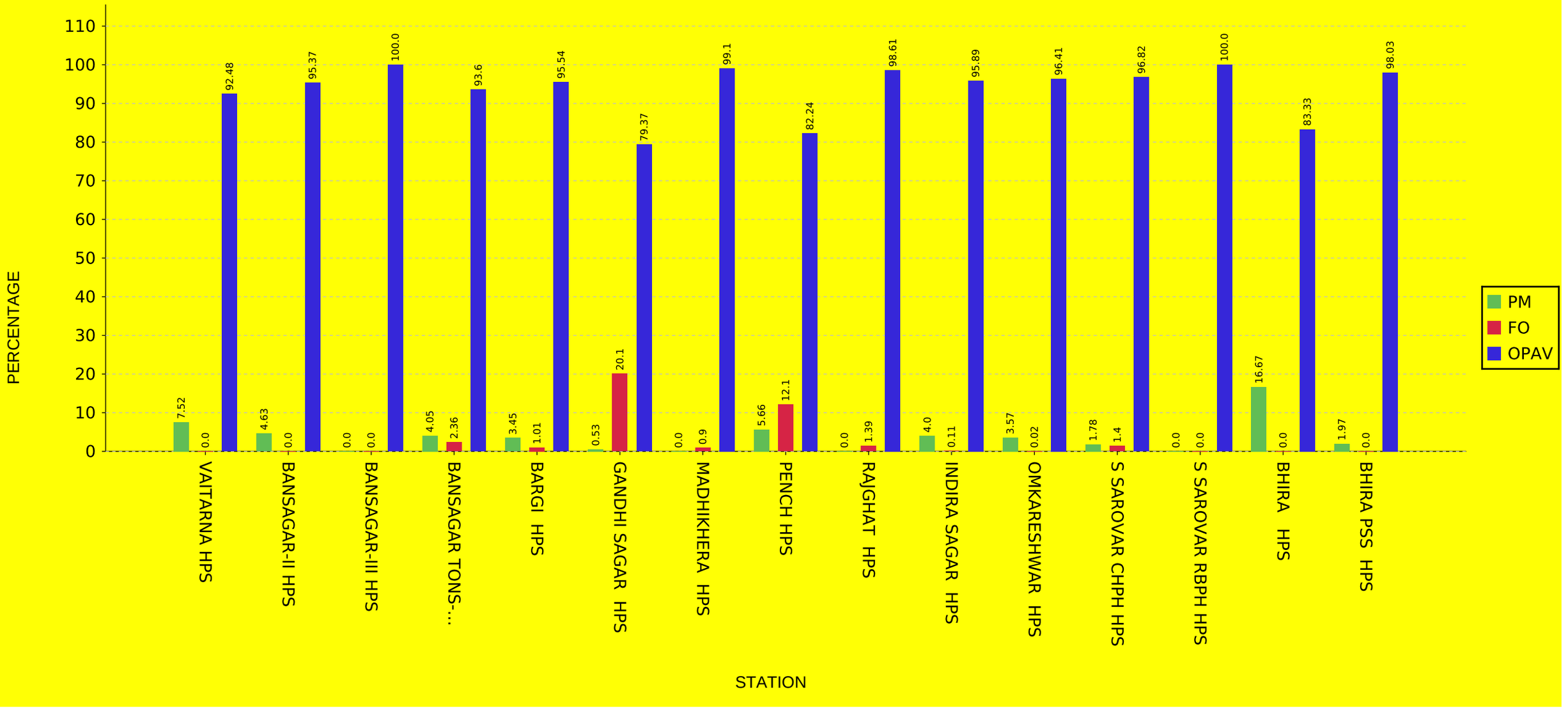


EXHIBIT 6.8

OPERATING AVAILABILITY OF H E STATIONS DURING 2024-25

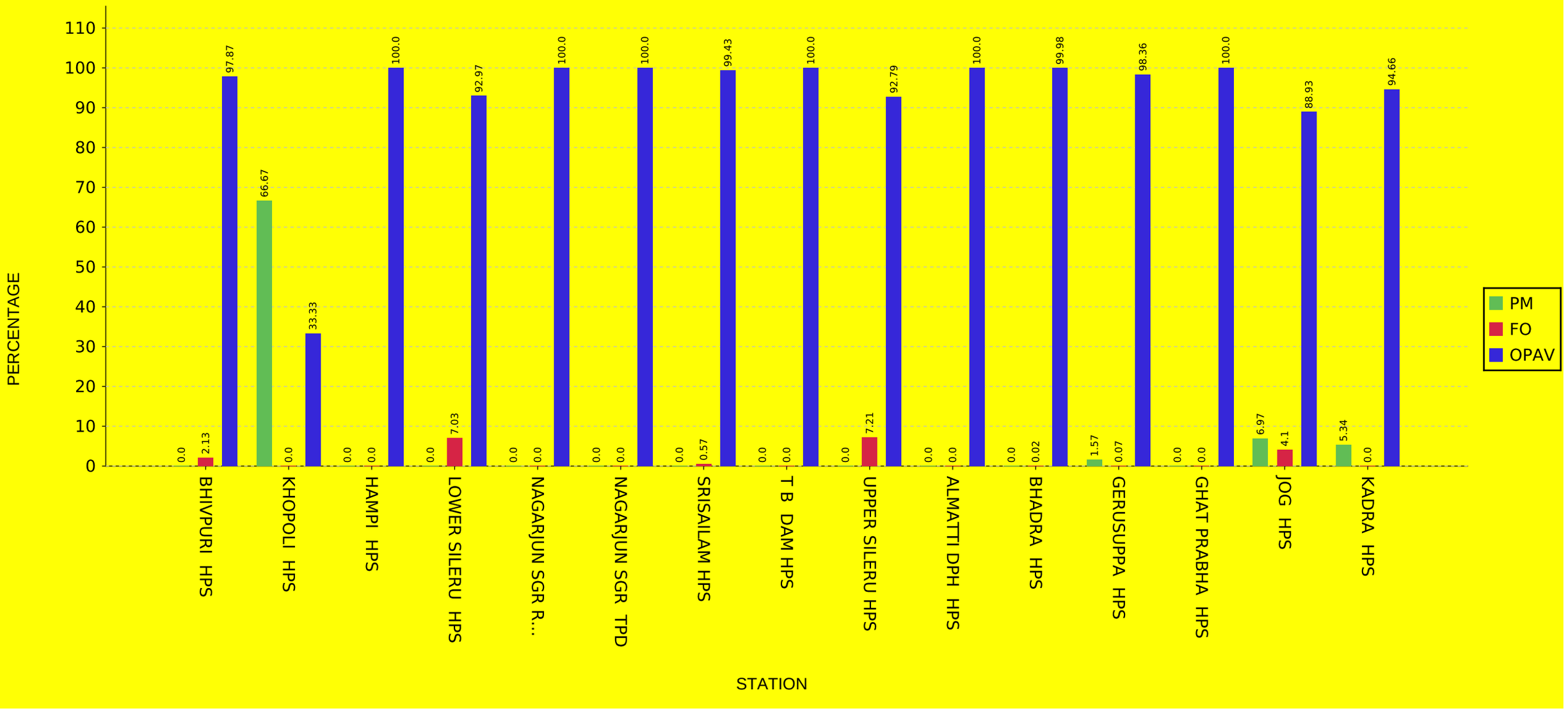


EXHIBIT 6.9

OPERATING AVAILABILITY OF H E STATIONS DURING 2024-25

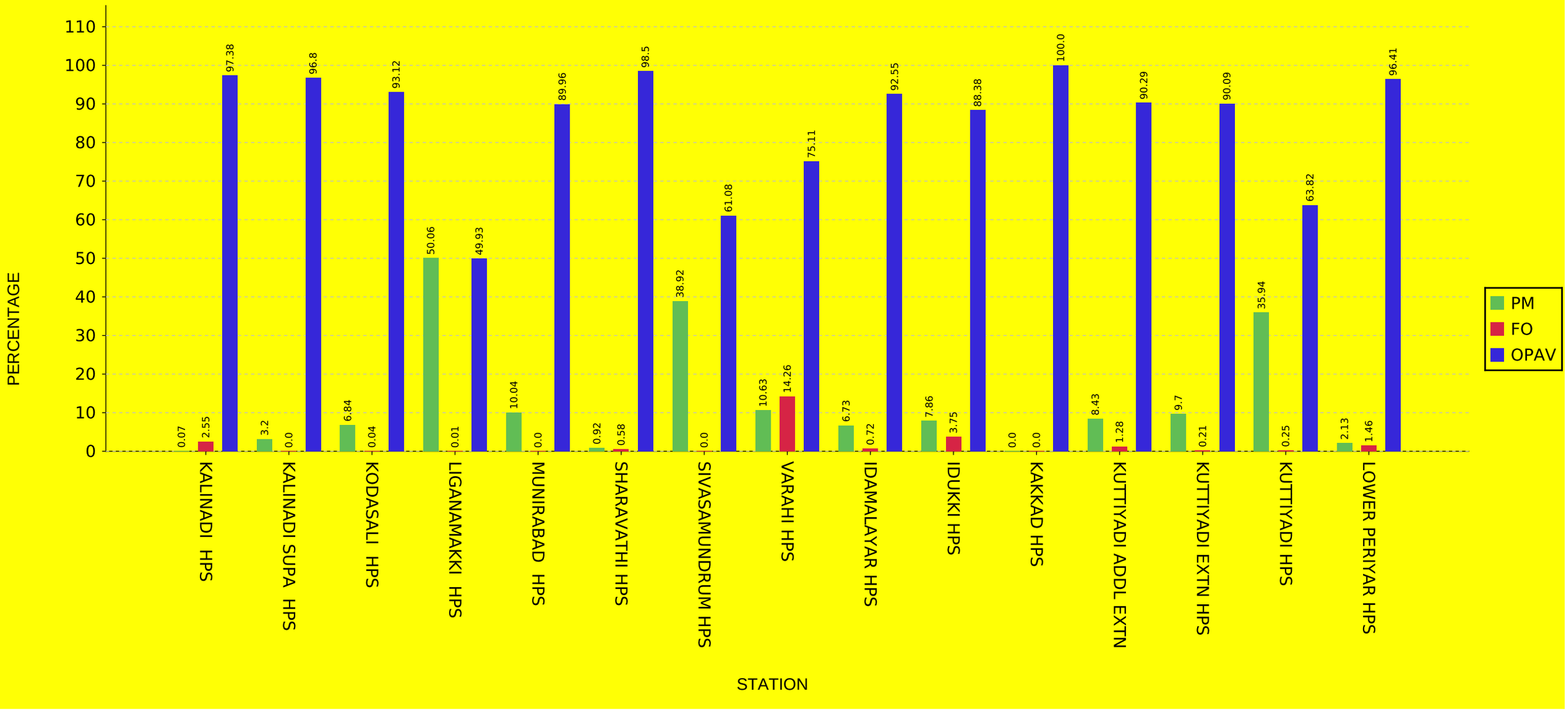


EXHIBIT 6.10

OPERATING AVAILABILITY OF H E STATIONS DURING 2024-25

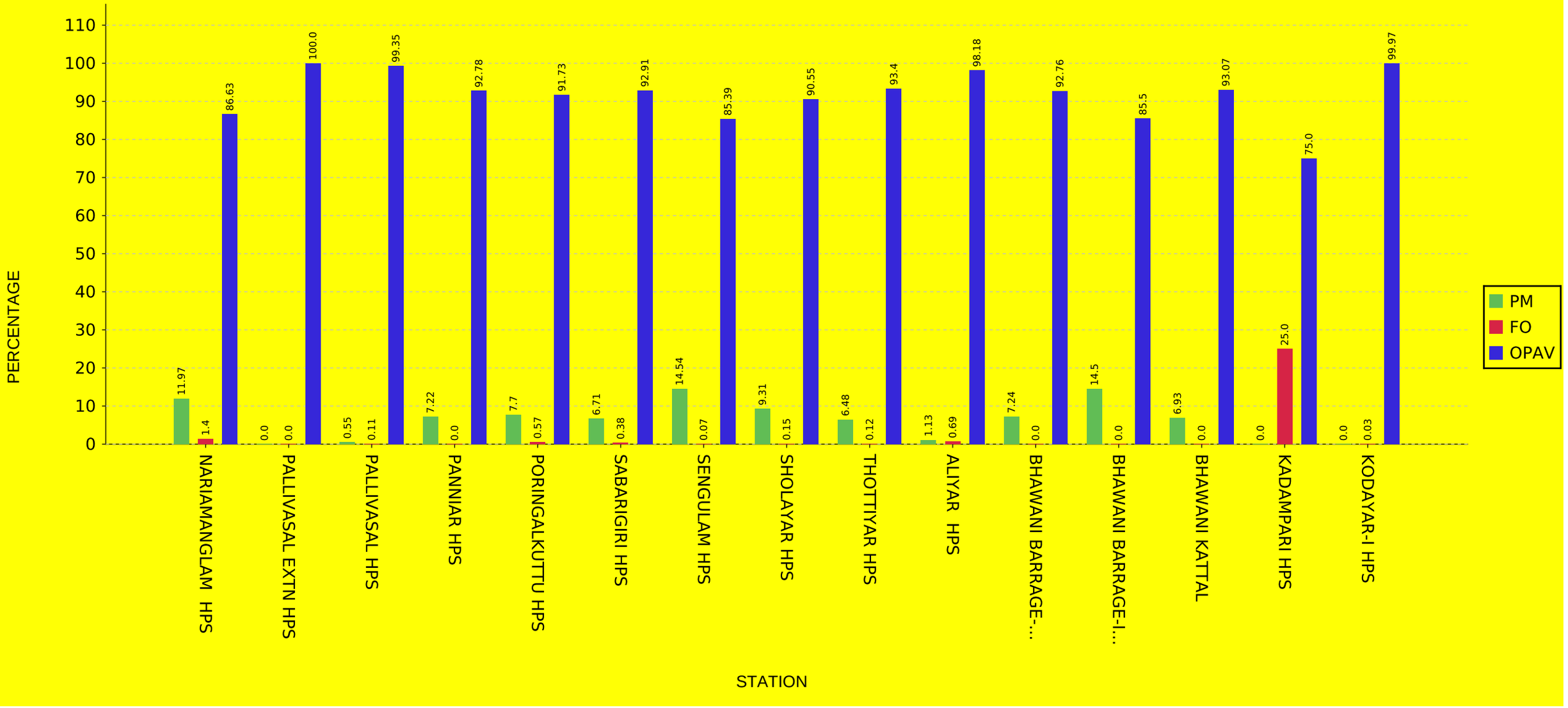


EXHIBIT 6.11

OPERATING AVAILABILITY OF H E STATIONS DURING 2024-25

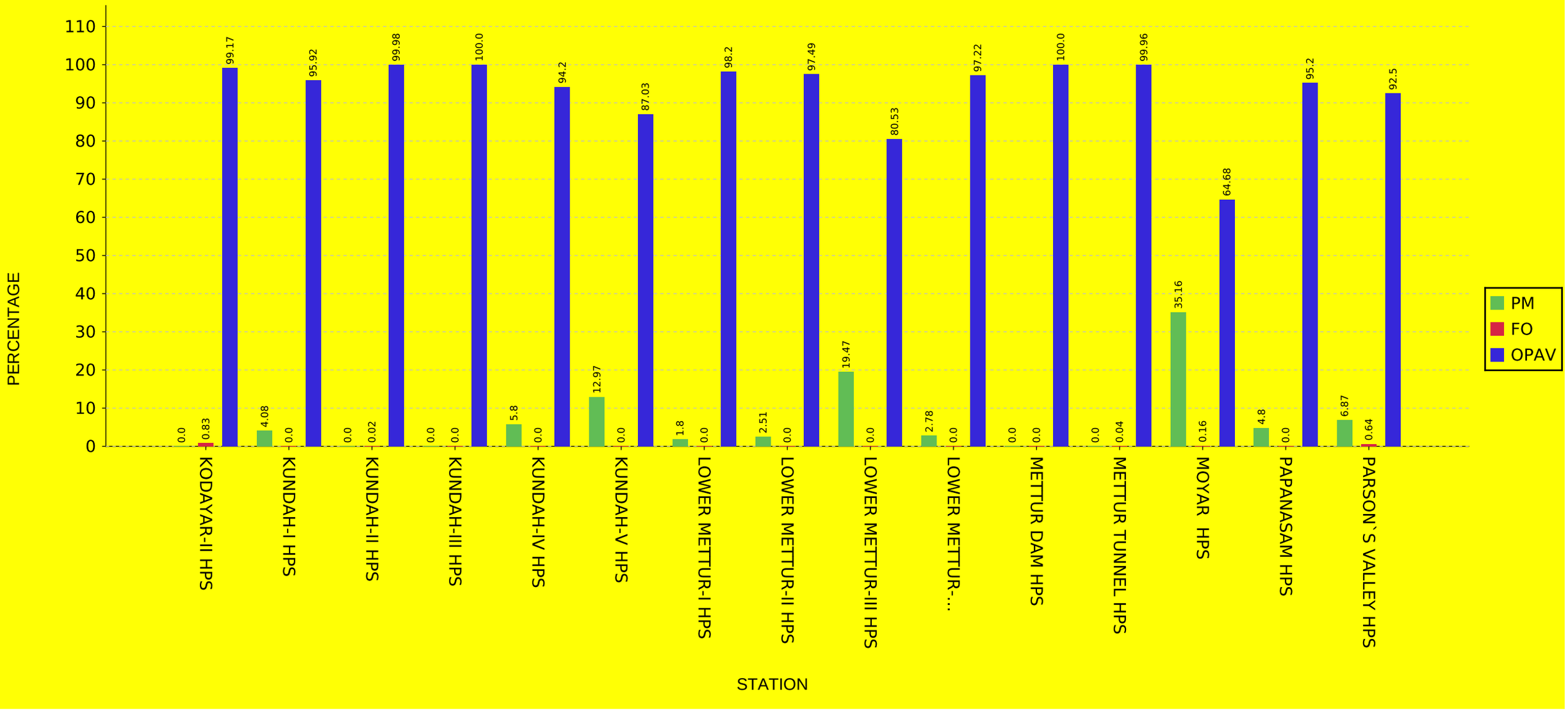


EXHIBIT 6.12

OPERATING AVAILABILITY OF H E STATIONS DURING 2024-25

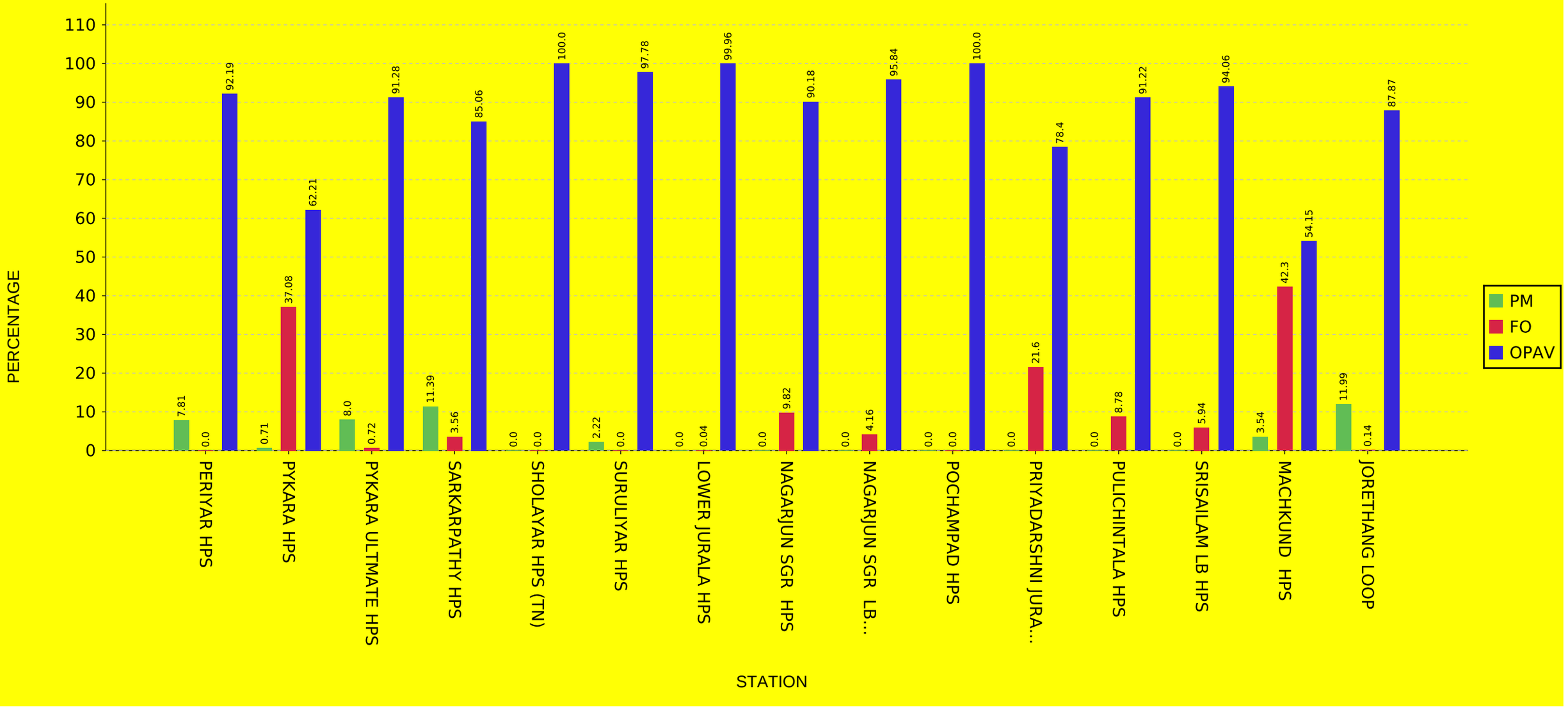


EXHIBIT 6.13

OPERATING AVAILABILITY OF H E STATIONS DURING 2024-25

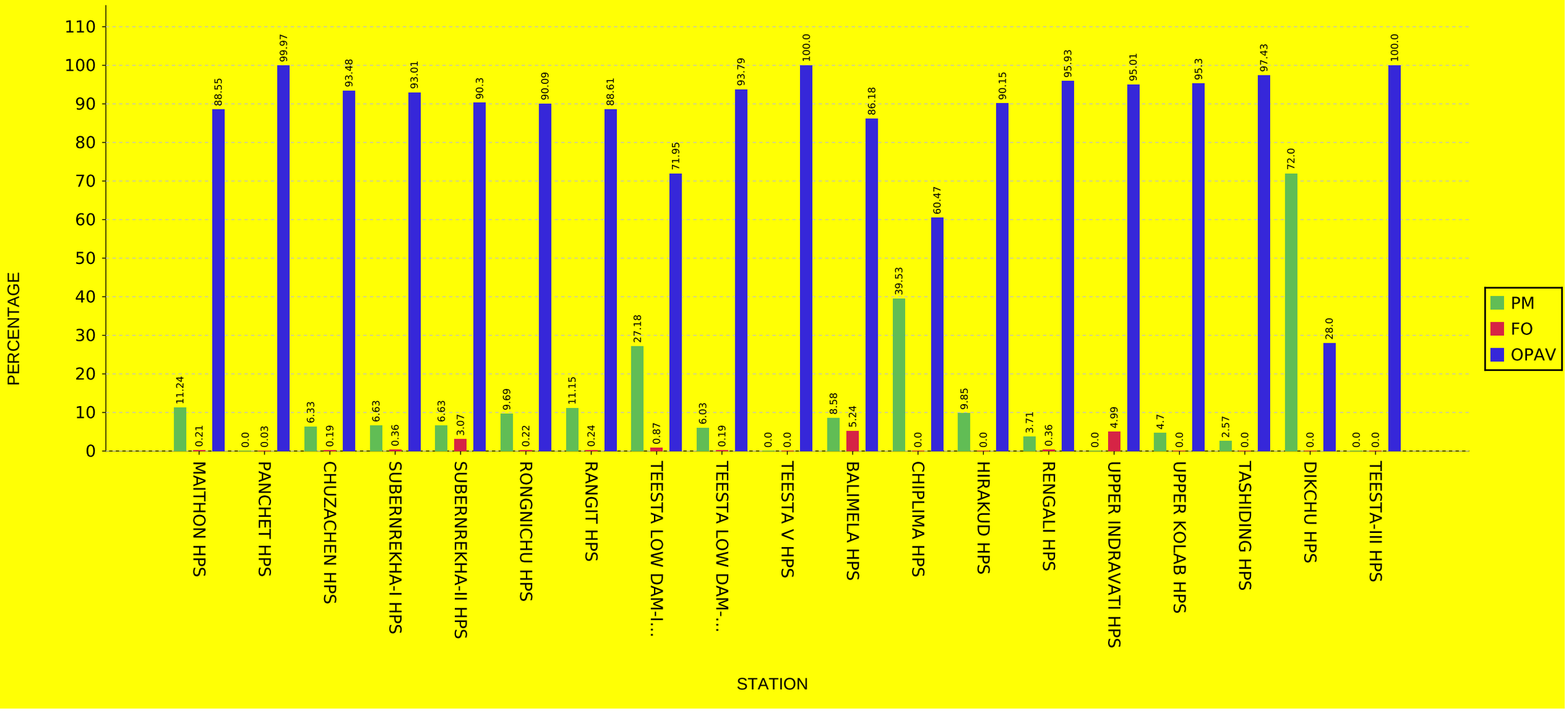
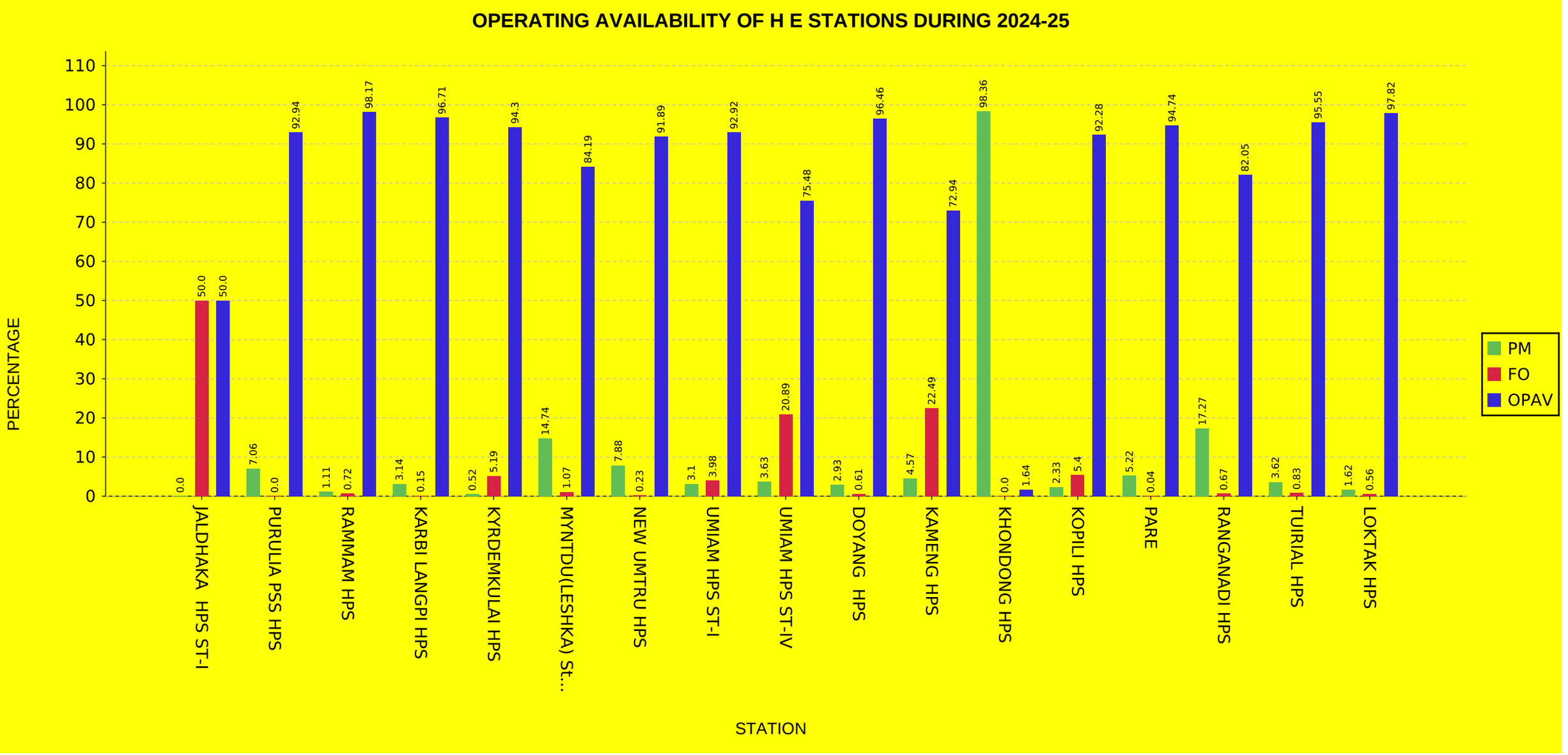


EXHIBIT 6.14


OPERATING AVAILABILITY OF H E STATIONS DURING 2024-25
PERCENTAGE
0
10
20
30
40
50
60
70
80
90
100
110
PM
FO
OPAV
0.0
50.0
50.0
7.06
0.0
92.94
1.11
0.72
98.17
3.14
0.15
96.71
0.52
5.19
94.3
14.74
1.07
84.19
7.88
0.23
91.89
3.1
3.98
92.92
3.63
20.89
75.48
2.93
0.61
96.46
4.57
22.49
72.94
98.36
0.0
1.64
2.33
5.4
92.28
5.22
0.04
94.74
17.27
0.67
82.05
3.62
0.83
95.55
1.62
0.56
97.82
JALDHAKA HPS ST-I
PURULIA PSS HPS
RAMMAM HPS
KARBI LANGPI HPS
KYRDEMKULAI HPS
MYNTDU(LESHKA) S
NEW UMTRU HPS
UMIAM HPS ST-I
UMIAM HPS ST-IV
DOYANG HPS
KAMENG HPS
KHONDONG HPS
KOPILI HPS
PARE
RANGANADI HPS
TUIRIAL HPS
LOKTAK HPS
STATION

CENTRAL ELECTRICITY AUTHORITY
Hydro WING
Hydro Project Planning & Investigation Division

Annex 6.1

OPERAING AVAILABILITY OF HYDRO ELECTRIC UNITS DURING 2024-25

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
	Northern					
	ADHPL					
1	**ALLAIN DUHANGAN HPS**	1	96.00	6.33	12.81	80.86
		2	96.00	6.62	2.82	90.56
	TOTAL		**192.00**	**6.47**	**7.82**	**85.71**
	AHPC (GVK)					
2	**SHRINAGAR HPS**	1	82.50	1.68	0.00	98.32
		2	82.50	1.64	0.00	98.36
		3	82.50	1.71	0.00	98.29
		4	82.50	1.67	0.00	98.33
	TOTAL		**330.00**	**1.68**	**0.00**	**98.32**
	BBMB					
3	**BHAKRA LEFT HPS**	1	126.00	6.99	0.00	93.01
		2	126.00	0.00	0.00	100.00
		3	126.00	33.20	0.00	66.80
		4	126.00	47.72	0.00	52.28

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		5	126.00	6.29	0.00	93.71
	TOTAL		**630.00**	**18.84**	**0.00**	**81.16**
4	**BHAKRA RIGHT HPS**	6	157.00	1.98	0.00	98.02
		7	157.00	4.41	5.75	89.83
		8	157.00	6.62	0.00	93.38
		9	157.00	17.88	0.00	82.12
		10	157.00	61.97	0.00	38.03
	TOTAL		**785.00**	**18.57**	**1.15**	**80.28**
5	**DEHAR HPS**	1	165.00	0.00	0.00	100.00
		2	165.00	22.74	0.00	77.26
		3	165.00	0.00	0.00	100.00
		4	165.00	0.00	0.00	100.00
		5	165.00	8.59	0.00	91.41
		6	165.00	7.57	0.00	92.43
	TOTAL		**990.00**	**6.48**	**0.00**	**93.52**
6	**GANGUWAL HPS**	1	29.25	0.00	0.00	100.00
		2	24.20	5.75	0.00	94.25
		3	24.20	1.62	0.00	98.38

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
	TOTAL		**77.65**	**2.46**	**0.00**	**97.54**
7	**KOTLA HPS**	1	29.25	5.75	2.47	91.78
		2	24.20	0.00	0.00	100.00
		3	24.20	0.00	0.00	100.00
	TOTAL		**77.65**	**1.92**	**0.82**	**97.26**
8	**PONG HPS**	1	66.00	4.25	0.00	95.75
		2	66.00	3.00	0.00	97.00
		3	66.00	0.00	0.00	100.00
		4	66.00	2.77	0.00	97.23
		5	66.00	3.10	0.00	96.90
		6	66.00	3.29	0.00	96.71
	TOTAL		**396.00**	**2.73**	**0.00**	**97.27**
	BVPCL					
9	**UHL-III HPS**	1	33.33	0.00	0.00	100.00
		2	33.33	0.00	0.00	100.00
		3	33.33	0.00	0.00	100.00
	TOTAL		**99.99**	**0.00**	**0.00**	**100.00**
	E.P.P.L.					
10	**MALANA-II HPS**	1	50.00	0.12	0.27	99.61

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		2	50.00	0.09	0.25	99.66
	TOTAL		**100.00**	**0.10**	**0.26**	**99.64**
	GBHPPL					
11	**BUDHIL HPS**	1	35.00	7.50	0.00	92.50
		2	35.00	0.00	0.00	100.00
	TOTAL		**70.00**	**3.75**	**0.00**	**96.25**
	GMR BHHPL					
12	**BAJOLI HOLI HPS**	1	60.00	15.51	0.00	84.49
		2	60.00	0.00	0.01	99.99
		3	60.00	0.00	0.00	100.00
	TOTAL		**180.00**	**5.17**	**0.00**	**94.83**
	HBPCL					
13	**BASPA HPS**	1	100.00	3.50	0.06	96.44
		2	100.00	2.69	0.52	96.79
		3	100.00	2.26	0.10	97.64
	TOTAL		**300.00**	**2.81**	**0.23**	**96.96**
14	**KARCHAM WANGTOO HPS**	1	261.25	3.19	0.00	96.81
		2	261.25	0.00	0.00	100.00
		3	261.25	7.15	0.00	92.85

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		4	261.25	0.00	0.00	100.00
	TOTAL		**1045.00**	**2.59**	**0.00**	**97.41**
	HPPCL					
15	**KASHANG INTEGRATED HEP**	1	65.00	0.00	0.00	100.00
		2	65.00	4.03	0.00	95.97
		3	65.00	15.74	0.00	84.26
	TOTAL		**195.00**	**6.59**	**0.00**	**93.41**
16	**SAINJ HPS**	1	50.00	0.41	0.00	99.59
		2	50.00	0.71	6.07	93.22
	TOTAL		**100.00**	**0.56**	**3.04**	**96.40**
17	**SAWRA KUDDU HPS**	1	37.00	0.00	0.32	99.68
		2	37.00	0.00	0.21	99.79
		3	37.00	0.00	0.53	99.47
	TOTAL		**111.00**	**0.00**	**0.36**	**99.64**
	HPSEB					
18	**BASSI HPS**	1	16.50	0.38	0.00	99.62
		2	16.50	8.05	0.00	91.95
		3	16.50	0.00	0.00	100.00
		4	16.50	0.00	0.00	100.00

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
	TOTAL		**66.00**	**2.11**	**0.00**	**97.89**
19	**GIRI BATA HPS**	1	30.00	0.00	0.00	100.00
		2	30.00	8.87	0.00	91.13
	TOTAL		**60.00**	**4.43**	**0.00**	**95.57**
20	**LARJI HPS**	1	42.00	0.00	8.99	91.01
		2	42.00	0.00	35.86	64.14
		3	42.00	0.00	80.18	19.82
	TOTAL		**126.00**	**0.00**	**41.68**	**58.32**
21	**SANJAY HPS**	1	40.00	0.00	0.00	100.00
		2	40.00	0.00	0.00	100.00
		3	40.00	0.00	0.00	100.00
	TOTAL		**120.00**	**0.00**	**0.00**	**100.00**
	HSPCL					
22	**SORANG HPS**	1	50.00	4.81	0.00	95.19
		2	50.00	0.00	0.00	100.00
	TOTAL		**100.00**	**2.40**	**0.00**	**97.60**
	IAEPL					
23	**CHANJU-I HPS**	1	12.00	8.24	0.00	91.76
		2	12.00	8.14	0.00	91.86

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		3	12.00	9.71	0.00	90.29
	TOTAL		**36.00**	**8.70**	**0.00**	**91.30**
	JKSPDC					
24	**BAGLIHAR HPS**	1	150.00	9.81	0.04	90.15
		2	150.00	7.09	0.00	92.91
		3	150.00	16.74	0.03	83.22
	TOTAL		**450.00**	**11.21**	**0.02**	**88.76**
25	**BAGLIHAR II HPS**	1	150.00	0.55	0.00	99.45
		2	150.00	0.00	0.00	100.00
		3	150.00	0.00	0.00	100.00
	TOTAL		**450.00**	**0.18**	**0.00**	**99.82**
26	**LOWER JHELUM HPS**	1	35.00	0.00	0.00	100.00
		2	35.00	0.00	0.00	100.00
		3	35.00	0.00	0.00	100.00
	TOTAL		**105.00**	**0.00**	**0.00**	**100.00**
27	**UPPER SINDH-II HPS**	3	35.00	77.99	0.00	22.01
		4	35.00	92.87	0.00	7.13
		5	35.00	27.39	0.78	71.83
	TOTAL		**105.00**	**66.09**	**0.26**	**33.65**

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
	JPPVL					
28	**VISHNU PRAYAG HPS**	1	100.00	0.55	0.10	99.34
		2	100.00	0.62	0.11	99.26
		3	100.00	0.62	0.06	99.32
		4	100.00	0.55	0.07	99.38
	TOTAL		**400.00**	**0.59**	**0.09**	**99.33**
	L&T					
29	**SINGOLI BHATWARI HPS**	1	33.00	11.96	0.46	87.58
		2	33.00	11.32	0.89	87.79
		3	33.00	9.63	0.49	89.88
	TOTAL		**99.00**	**10.97**	**0.61**	**88.42**
	MPCL					
30	**MALANA HPS**	1	43.00	3.67	6.27	90.06
		2	43.00	6.58	6.77	86.64
	TOTAL		**86.00**	**5.12**	**6.52**	**88.35**
	NHPC					
31	**BAIRA SIUL HPS**	1	60.00	11.20	0.18	88.62
		2	60.00	9.19	0.08	90.73
		3	60.00	9.70	2.05	88.24

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
	TOTAL		**180.00**	**10.03**	**0.77**	**89.20**
32	**CHAMERA-I HPS**	1	180.00	6.41	0.68	92.91
		2	180.00	3.92	0.30	95.77
		3	180.00	4.91	0.48	94.62
	TOTAL		**540.00**	**5.08**	**0.49**	**94.43**
33	**CHAMERA-II HPS**	1	100.00	0.72	0.10	99.18
		2	100.00	4.94	0.08	94.97
		3	100.00	4.19	0.18	95.63
	TOTAL		**300.00**	**3.28**	**0.12**	**96.59**
34	**CHAMERA-III HPS**	1	77.00	4.31	0.02	95.68
		2	77.00	0.46	0.03	99.51
		3	77.00	0.46	0.02	99.52
	TOTAL		**231.00**	**1.74**	**0.02**	**98.23**
35	**CHUTAK HPS**	1	11.00	3.61	0.26	96.13
		2	11.00	6.93	0.10	92.96
		3	11.00	5.29	0.26	94.45
		4	11.00	3.91	0.10	95.98
	TOTAL		**44.00**	**4.94**	**0.18**	**94.88**

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
36	**DHAULI GANGA HPS**	1	70.00	5.06	0.23	94.71
		2	70.00	5.64	0.09	94.27
		3	70.00	6.16	0.25	93.59
		4	70.00	5.03	0.08	94.88
	TOTAL		**280.00**	**5.47**	**0.16**	**94.36**
37	**DULHASTI HPS**	1	130.00	6.62	0.34	93.05
		2	130.00	11.32	0.06	88.62
		3	130.00	6.68	0.11	93.21
	TOTAL		**390.00**	**8.21**	**0.17**	**91.62**
38	**KISHANGANGA HPS**	1	110.00	23.35	0.56	76.09
		2	110.00	9.69	0.54	89.77
		3	110.00	4.53	0.03	95.44
	TOTAL		**330.00**	**12.52**	**0.37**	**87.10**
39	**NIMMO BAZGO HPS**	1	15.00	13.65	0.26	86.09
		2	15.00	4.91	0.08	95.02
		3	15.00	0.45	0.69	98.86
	TOTAL		**45.00**	**6.34**	**0.34**	**93.32**
40	**PARBATI-II HPS**	1	200.00	0.00	0.00	100.00

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		2	200.00	0.00	0.00	100.00
		3	200.00	0.00	0.00	100.00
	TOTAL		**600.00**	**0.00**	**0.00**	**100.00**
41	**PARBATI-III HPS**	1	130.00	17.30	0.10	82.60
		2	130.00	4.50	7.15	88.35
		3	130.00	9.61	0.08	90.31
		4	130.00	0.62	0.18	99.21
	TOTAL		**520.00**	**8.01**	**1.88**	**90.12**
42	**SALAL HPS**	1	115.00	5.46	0.09	94.45
		2	115.00	0.00	0.98	99.02
		3	115.00	6.89	0.12	92.99
		4	115.00	4.96	0.14	94.90
		5	115.00	4.40	0.14	95.46
		6	115.00	5.59	1.17	93.24
	TOTAL		**690.00**	**4.55**	**0.44**	**95.01**
43	**SEWA-II HPS**	1	40.00	103.57	0.04	-3.61
		2	40.00	5.04	0.76	94.20
		3	40.00	3.71	0.06	96.23

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
	TOTAL		**120.00**	**37.44**	**0.29**	**62.27**
44	**TANAKPUR HPS**	1	31.40	14.00	0.01	85.98
		2	31.40	10.01	0.23	89.76
		3	31.40	0.72	0.01	99.27
	TOTAL		**94.20**	**8.24**	**0.08**	**91.67**
45	**URI-I HPS**	1	120.00	6.46	0.01	93.52
		2	120.00	22.55	0.41	77.04
		3	120.00	9.59	0.04	90.37
		4	120.00	11.50	0.80	87.70
	TOTAL		**480.00**	**12.53**	**0.32**	**87.16**
46	**URI-II HPS**	1	60.00	8.82	0.04	91.14
		2	60.00	6.64	0.00	93.36
		3	60.00	6.84	0.01	93.15
		4	60.00	4.95	0.06	94.99
	TOTAL		**240.00**	**6.81**	**0.03**	**93.16**
	NTPC Ltd.					
47	**KOLDAM**	1	200.00	0.00	0.65	99.35
		2	200.00	0.00	1.18	98.82
		3	200.00	1.37	2.48	96.14

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		4	200.00	2.57	1.85	95.58
	TOTAL		**800.00**	**0.99**	**1.54**	**97.47**
	PSPCL					
48	**ANANDPUR SAHIB-I HPS**	1	33.50	0.00	0.00	100.00
		2	33.50	0.00	0.00	100.00
	TOTAL		**67.00**	**0.00**	**0.00**	**100.00**
49	**ANANDPUR SAHIB-II HPS**	3	33.50	0.00	0.00	100.00
		4	33.50	0.00	0.00	100.00
	TOTAL		**67.00**	**0.00**	**0.00**	**100.00**
50	**MUKERIAN-I HPS**	1	15.00	0.00	0.00	100.00
		2	15.00	0.00	0.00	100.00
		3	15.00	0.00	0.00	100.00
	TOTAL		**45.00**	**0.00**	**0.00**	**100.00**
51	**MUKERIAN-II HPS**	4	15.00	0.00	0.00	100.00
		5	15.00	0.00	0.00	100.00
		6	15.00	0.00	0.00	100.00
	TOTAL		**45.00**	**0.00**	**0.00**	**100.00**
52	**MUKERIAN-III HPS**	7	19.50	0.00	0.00	100.00
		8	19.50	0.00	0.00	100.00

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		9	19.50	0.00	0.00	100.00
	TOTAL		**58.50**	**0.00**	**0.00**	**100.00**
53	**MUKERIAN-IV HPS**	10	19.50	0.00	0.00	100.00
		11	19.50	0.00	0.00	100.00
		12	19.50	0.00	0.00	100.00
	TOTAL		**58.50**	**0.00**	**0.00**	**100.00**
54	**RANJIT SAGAR HPS**	1	150.00	10.92	0.19	88.89
		2	150.00	10.52	0.35	89.13
		3	150.00	0.55	0.00	99.45
		4	150.00	8.08	0.00	91.92
	TOTAL		**600.00**	**7.52**	**0.13**	**92.35**
55	**SHANAN HPS**	1	15.00	15.26	0.63	84.11
		2	15.00	6.68	0.13	93.18
		3	15.00	5.26	1.83	92.91
		4	15.00	3.59	1.93	94.48
		5	50.00	0.00	1.31	98.69
	TOTAL		**110.00**	**6.16**	**1.17**	**92.67**
	RRVUNL					
56	**JAWAHAR SAGAR HPS**	1	33.00	0.00	0.00	100.00

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		2	33.00	0.00	0.00	100.00
		3	33.00	0.00	0.00	100.00
	TOTAL		**99.00**	**0.00**	**0.00**	**100.00**
57	**MAHI BAJAJ-I HPS**	1	25.00	0.00	0.00	100.00
		2	25.00	0.00	0.08	99.92
	TOTAL		**50.00**	**0.00**	**0.04**	**99.96**
58	**MAHI BAJAJ-II HPS**	3	45.00	0.00	0.00	100.00
		4	45.00	0.00	0.00	100.00
	TOTAL		**90.00**	**0.00**	**0.00**	**100.00**
59	**R P SAGAR HPS**	1	43.00	6.93	0.00	93.07
		2	43.00	0.00	84.43	15.57
		3	43.00	6.11	0.00	93.89
		4	43.00	5.83	0.00	94.17
	TOTAL		**172.00**	**4.72**	**21.11**	**74.18**
	SJVNL					
60	**NAITWAR MORI HPS**	1	30.00	0.00	0.00	100.00
		2	30.00	0.00	0.00	100.00
	TOTAL		**60.00**	**0.00**	**0.00**	**100.00**
61	**NATHPA JHAKRI HPS**	1	250.00	2.42	0.00	97.58

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		2	250.00	0.00	0.00	100.00
		3	250.00	0.00	0.00	100.00
		4	250.00	2.42	0.01	97.57
		5	250.00	0.00	0.07	99.93
		6	250.00	3.19	0.00	96.81
	TOTAL		**1500.00**	**1.34**	**0.01**	**98.65**
62	**RAMPUR HPS**	1	68.67	0.00	0.04	99.96
		2	68.67	0.00	0.03	99.97
		3	68.67	2.79	0.01	97.19
		4	68.67	2.18	0.02	97.80
		5	68.67	2.59	0.15	97.26
		6	68.67	3.01	0.83	96.16
	TOTAL		**412.02**	**1.76**	**0.18**	**98.06**
	THDC					
63	**KOTESHWAR HPS**	1	100.00	22.85	0.00	77.15
		2	100.00	10.19	0.00	89.81
		3	100.00	8.28	0.00	91.72
		4	100.00	0.00	0.00	100.00

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
	TOTAL		**400.00**	**10.33**	**0.00**	**89.67**
64	**TEHRI ST-1 HPS**	1	250.00	9.09	0.00	90.91
		2	250.00	0.00	0.00	100.00
		3	250.00	9.06	0.00	90.94
		4	250.00	9.05	0.00	90.95
	TOTAL		**1000.00**	**6.80**	**0.00**	**93.20**
	UJVNL					
65	**CHIBRO (YAMUNA) HPS**	1	60.00	11.54	0.02	88.44
		2	60.00	25.58	7.94	66.48
		3	60.00	3.44	0.00	96.56
		4	60.00	21.91	0.00	78.09
	TOTAL		**240.00**	**15.61**	**1.99**	**82.39**
66	**CHILLA HPS**	1	36.00	10.96	0.05	88.99
		2	36.00	10.73	6.34	82.93
		3	36.00	30.39	1.03	68.58
		4	36.00	5.12	0.39	94.49
	TOTAL		**144.00**	**14.30**	**1.95**	**83.75**
67	**DHAKRANI HPS**	1	11.25	95.82	0.00	4.18
		2	11.25	0.00	0.02	99.98

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		3	11.25	4.93	0.07	94.99
	TOTAL		**33.75**	**33.58**	**0.03**	**66.38**
68	**DHALIPUR HPS**	1	17.00	9.94	0.16	89.90
		2	17.00	2.67	0.15	97.18
		3	17.00	21.23	5.12	73.65
	TOTAL		**51.00**	**11.28**	**1.81**	**86.91**
69	**KHATIMA HPS**	1	13.80	9.17	0.15	90.68
		2	13.80	4.78	0.84	94.37
		3	13.80	7.49	1.45	91.06
	TOTAL		**41.40**	**7.15**	**0.82**	**92.04**
70	**KHODRI HPS**	1	30.00	24.87	0.00	75.13
		2	30.00	0.00	0.00	100.00
		3	30.00	0.00	0.00	100.00
		4	30.00	0.00	0.00	100.00
	TOTAL		**120.00**	**6.22**	**0.00**	**93.78**
71	**KULHAL HPS**	1	10.00	14.88	0.00	85.12
		2	10.00	14.97	0.00	85.03
		3	10.00	0.00	0.00	100.00

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
	TOTAL		**30.00**	**9.95**	**0.00**	**90.05**
72	**MANERI BHALI-I HPS**	1	30.00	0.21	0.38	99.41
		2	30.00	9.48	0.14	90.38
		3	30.00	9.10	0.49	90.41
	TOTAL		**90.00**	**6.27**	**0.34**	**93.40**
73	**MANERI BHALI-II HPS**	1	76.00	15.77	1.26	82.97
		2	76.00	14.35	0.00	85.65
		3	76.00	0.00	0.07	99.93
		4	76.00	13.17	0.23	86.59
	TOTAL		**304.00**	**10.82**	**0.39**	**88.79**
74	**RAMGANGA HPS**	1	66.00	0.00	0.04	99.96
		2	66.00	0.00	0.00	100.00
		3	66.00	0.00	105.72	-5.72
	TOTAL		**198.00**	**0.00**	**35.25**	**64.75**
75	**VYASI HPS**	1	60.00	13.19	0.00	86.81
		2	60.00	12.15	0.00	87.85
	TOTAL		**120.00**	**12.67**	**0.00**	**87.33**
	UPJVNL					
76	**KHARA HPS**	1	24.00	0.00	1.09	98.91

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		2	24.00	0.00	0.00	100.00
		3	24.00	0.00	0.00	100.00
	TOTAL		**72.00**	**0.00**	**0.36**	**99.64**
77	**MATATILA HPS**	1	10.20	0.00	0.00	100.00
		2	10.20	0.00	0.00	100.00
		3	10.20	8.44	0.00	91.56
	TOTAL		**30.60**	**2.81**	**0.00**	**97.19**
78	**OBRA HPS**	1	33.00	0.00	0.06	99.94
		2	33.00	0.00	0.05	99.95
		3	33.00	0.00	1.88	98.12
	TOTAL		**99.00**	**0.00**	**0.66**	**99.34**
79	**RIHAND HPS**	1	50.00	0.10	0.59	99.30
		2	50.00	0.00	1.13	98.87
		3	50.00	12.30	0.43	87.26
		4	50.00	8.31	0.00	91.69
		5	50.00	0.73	0.81	98.46
		6	50.00	0.00	1.96	98.04
	TOTAL		**300.00**	**3.57**	**0.82**	**95.60**

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
	Western					
	CSPGCL					
80	**HASDEOBANGO HPS**	1	40.00	0.00	0.00	100.00
		2	40.00	0.00	0.00	100.00
		3	40.00	0.00	0.00	100.00
	TOTAL		**120.00**	**0.00**	**0.00**	**100.00**
	DLHP					
81	**BHANDARDHARA HPS ST-II**	2	34.00	0.00	0.02	99.98
	TOTAL		**34.00**	**0.00**	**0.02**	**99.98**
	GSECL					
82	**KADANA HPS**	1	60.00	0.00	0.00	100.00
		2	60.00	0.00	0.00	100.00
		3	60.00	0.00	0.00	100.00
		4	60.00	0.00	0.00	100.00
	TOTAL		**240.00**	**0.00**	**0.00**	**100.00**
83	**UKAI HPS**	1	75.00	0.00	0.00	100.00
		2	75.00	0.00	0.00	100.00
		3	75.00	0.00	0.00	100.00
		4	75.00	0.00	19.71	80.29

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
	TOTAL		**300.00**	**0.00**	**4.93**	**95.07**
	MAHAGENCO					
84	**BHIRA TAIL RACE HPS**	1	40.00	20.50	0.00	79.50
		2	40.00	25.18	0.00	74.82
	TOTAL		**80.00**	**22.84**	**0.00**	**77.16**
85	**GHATGHAR PSS HPS**	1	125.00	0.00	6.39	93.61
		2	125.00	0.00	0.00	100.00
	TOTAL		**250.00**	**0.00**	**3.20**	**96.80**
86	**KOYNA DPH HPS**	1	18.00	7.23	0.32	92.45
		2	18.00	1.60	0.12	98.28
	TOTAL		**36.00**	**4.41**	**0.22**	**95.37**
87	**KOYNA-I&II HPS**	1	70.00	0.97	0.43	98.60
		2	70.00	1.18	0.00	98.82
		3	70.00	3.56	0.00	96.44
		4	70.00	0.00	0.00	100.00
		5	80.00	0.00	15.02	84.98
		6	80.00	9.27	0.00	90.73
		7	80.00	0.00	0.00	100.00
		8	80.00	0.00	5.66	94.34

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
	TOTAL		**600.00**	**1.87**	**2.64**	**95.49**
88	**KOYNA-III HPS**	1	80.00	4.73	0.00	95.27
		2	80.00	10.68	0.00	89.32
		3	80.00	11.21	0.00	88.79
		4	80.00	0.14	0.00	99.86
	TOTAL		**320.00**	**6.69**	**0.00**	**93.31**
89	**KOYNA-IV HPS**	1	250.00	1.10	0.00	98.90
		2	250.00	0.07	0.19	99.74
		3	250.00	0.07	0.00	99.93
		4	250.00	0.07	0.46	99.47
	TOTAL		**1000.00**	**0.33**	**0.16**	**99.51**
90	**TILLARI HPS**	1	60.00	0.00	21.39	78.61
	TOTAL		**60.00**	**0.00**	**21.39**	**78.61**
91	**VAITARNA HPS**	1	60.00	7.52	0.00	92.48
	TOTAL		**60.00**	**7.52**	**0.00**	**92.48**
	MPPGCL					
92	**BANSAGAR-II HPS**	1	15.00	4.22	0.00	95.78
		2	15.00	5.05	0.00	94.95
	TOTAL		**30.00**	**4.63**	**0.00**	**95.37**

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
93	**BANSAGAR-III HPS**	1	20.00	0.00	0.00	100.00
		2	20.00	0.00	0.00	100.00
		3	20.00	0.00	0.00	100.00
	TOTAL		**60.00**	**0.00**	**0.00**	**100.00**
94	**BANSAGAR TONS-I HPS**	1	105.00	12.14	2.03	85.83
		2	105.00	0.00	1.63	98.37
		3	105.00	0.00	3.40	96.60
	TOTAL		**315.00**	**4.05**	**2.36**	**93.60**
95	**BARGI HPS**	1	45.00	0.00	2.01	97.99
		2	45.00	6.91	0.00	93.09
	TOTAL		**90.00**	**3.45**	**1.01**	**95.54**
96	**GANDHI SAGAR HPS**	1	23.00	0.00	0.50	99.50
		2	23.00	0.00	0.00	100.00
		3	23.00	0.00	100.00	0.00
		4	23.00	2.65	0.00	97.35
		5	23.00	0.00	0.00	100.00
	TOTAL		**115.00**	**0.53**	**20.10**	**79.37**
97	**MADHIKHERA HPS**	1	20.00	0.00	2.71	97.29

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		2	20.00	0.00	0.00	100.00
		3	20.00	0.00	0.00	100.00
	TOTAL		**60.00**	**0.00**	**0.90**	**99.10**
98	**PENCH HPS**	1	80.00	5.79	24.19	70.02
		2	80.00	5.53	0.00	94.47
	TOTAL		**160.00**	**5.66**	**12.10**	**82.24**
99	**RAJGHAT HPS**	1	15.00	0.00	0.00	100.00
		2	15.00	0.00	0.00	100.00
		3	15.00	0.00	4.16	95.84
	TOTAL		**45.00**	**0.00**	**1.39**	**98.61**
	NHDC					
100	**INDIRA SAGAR HPS**	1	125.00	4.01	0.00	95.99
		2	125.00	2.88	0.75	96.38
		3	125.00	2.60	0.00	97.40
		4	125.00	3.98	0.12	95.89
		5	125.00	4.29	0.00	95.71
		6	125.00	4.01	0.00	95.99
		7	125.00	5.62	0.00	94.38

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		8	125.00	4.60	0.00	95.40
	TOTAL		**1000.00**	**4.00**	**0.11**	**95.89**
101	**OMKARESHWAR HPS**	1	65.00	2.42	0.00	97.58
		2	65.00	3.65	0.00	96.35
		3	65.00	3.11	0.00	96.89
		4	65.00	4.51	0.00	95.49
		5	65.00	3.92	0.00	96.08
		6	65.00	3.38	0.15	96.46
		7	65.00	5.34	0.00	94.66
		8	65.00	2.22	0.00	97.78
	TOTAL		**520.00**	**3.57**	**0.02**	**96.41**
	SSNNL					
102	**S SAROVAR CHPH HPS**	1	50.00	0.00	0.09	99.91
		2	50.00	3.48	0.55	95.97
		3	50.00	0.01	0.00	99.99
		4	50.00	5.38	6.36	88.26
		5	50.00	0.05	0.00	99.95
	TOTAL		**250.00**	**1.78**	**1.40**	**96.82**

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
103	**S SAROVAR RBPH HPS**	1	200.00	0.00	0.00	100.00
		2	200.00	0.00	0.00	100.00
		3	200.00	0.00	0.00	100.00
		4	200.00	0.00	0.00	100.00
		5	200.00	0.00	0.00	100.00
		6	200.00	0.00	0.00	100.00
	TOTAL		**1200.00**	**0.00**	**0.00**	**100.00**
	TATA MAH.					
104	**BHIRA HPS**	1	25.00	0.00	0.00	100.00
		2	25.00	0.00	0.00	100.00
		3	25.00	0.00	0.00	100.00
		4	25.00	100.00	0.00	0.00
		5	25.00	0.00	0.00	100.00
		6	25.00	0.00	0.00	100.00
	TOTAL		**150.00**	**16.67**	**0.00**	**83.33**
105	**BHIRA PSS HPS**	1	150.00	1.97	0.00	98.03
	TOTAL		**150.00**	**1.97**	**0.00**	**98.03**
106	**BHIVPURI HPS**	1	24.00	0.00	10.65	89.35

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		2	24.00	0.00	0.00	100.00
		3	24.00	0.00	0.00	100.00
		4	1.50	0.00	0.00	100.00
		5	1.50	0.00	0.00	100.00
	TOTAL		**75.00**	**0.00**	**2.13**	**97.87**
107	**KHOPOLI HPS**	1	24.00	0.00	0.00	100.00
		2	24.00	100.00	0.00	0.00
		3	24.00	100.00	0.00	0.00
	TOTAL		**72.00**	**66.67**	**0.00**	**33.33**
	Southern					
	APGENCO					
108	**HAMPI HPS**	1	9.00	0.00	0.00	100.00
		2	9.00	0.00	0.00	100.00
		3	9.00	0.00	0.00	100.00
		4	9.00	0.00	0.00	100.00
	TOTAL		**36.00**	**0.00**	**0.00**	**100.00**
109	**LOWER SILERU HPS**	1	115.00	0.00	0.00	100.00
		2	115.00	0.00	28.13	71.87
		3	115.00	0.00	0.00	100.00

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		4	115.00	0.00	0.00	100.00
	TOTAL		**460.00**	**0.00**	**7.03**	**92.97**
110	**NAGARJUN SGR RBC HPS**	1	30.00	0.00	0.00	100.00
		2	30.00	0.00	0.00	100.00
		3	30.00	0.00	0.00	100.00
	TOTAL		**90.00**	**0.00**	**0.00**	**100.00**
111	**NAGARJUN SGR TPD**	1	25.00	0.00	0.00	100.00
		2	25.00	0.00	0.00	100.00
	TOTAL		**50.00**	**0.00**	**0.00**	**100.00**
112	**SRISAILAM HPS**	1	110.00	0.00	0.00	100.00
		2	110.00	0.00	0.00	100.00
		3	110.00	0.00	0.00	100.00
		4	110.00	0.00	0.00	100.00
		5	110.00	0.00	0.03	99.97
		6	110.00	0.00	0.34	99.66
		7	110.00	0.00	3.65	96.35
	TOTAL		**770.00**	**0.00**	**0.57**	**99.43**
113	**T B DAM HPS**	1	9.00	0.00	0.00	100.00

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		2	9.00	0.00	0.00	100.00
		3	9.00	0.00	0.00	100.00
		4	9.00	0.00	0.00	100.00
	TOTAL		**36.00**	**0.00**	**0.00**	**100.00**
114	**UPPER SILERU HPS**	1	60.00	0.00	26.81	73.19
		2	60.00	0.00	0.00	100.00
		3	60.00	0.00	0.00	100.00
		4	60.00	0.00	2.05	97.95
	TOTAL		**240.00**	**0.00**	**7.21**	**92.79**
	KPCL					
115	**ALMATTI DPH HPS**	1	15.00	0.00	0.00	100.00
		2	55.00	0.00	0.00	100.00
		3	55.00	0.00	0.00	100.00
		4	55.00	0.00	0.00	100.00
		5	55.00	0.00	0.00	100.00
		6	55.00	0.00	0.00	100.00
	TOTAL		**290.00**	**0.00**	**0.00**	**100.00**
116	**BHADRA HPS**	1	2.00	0.00	0.00	100.00

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		2	12.00	0.00	0.07	99.93
		3	12.00	0.00	0.00	100.00
	TOTAL		**26.00**	**0.00**	**0.02**	**99.98**
117	**GERUSUPPA HPS**	1	60.00	0.00	0.00	100.00
		2	60.00	2.91	0.00	97.09
		3	60.00	3.38	0.28	96.34
		4	60.00	0.00	0.00	100.00
	TOTAL		**240.00**	**1.57**	**0.07**	**98.36**
118	**GHAT PRABHA HPS**	1	16.00	0.00	0.00	100.00
		2	16.00	0.00	0.00	100.00
	TOTAL		**32.00**	**0.00**	**0.00**	**100.00**
119	**JOG HPS**	1	13.20	2.64	0.00	97.36
		2	13.20	1.17	27.16	71.67
		3	13.20	0.12	0.00	99.88
		4	13.20	0.00	0.00	100.00
		5	21.60	8.15	0.00	91.85
		6	21.60	8.06	0.97	90.96
		7	21.60	8.95	0.05	91.00

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		8	21.60	26.68	4.58	68.75
	TOTAL		**139.20**	**6.97**	**4.10**	**88.93**
120	**KADRA HPS**	1	50.00	4.95	0.00	95.05
		2	50.00	5.42	0.00	94.58
		3	50.00	5.63	0.00	94.37
	TOTAL		**150.00**	**5.34**	**0.00**	**94.66**
121	**KALINADI HPS**	1	150.00	0.00	0.38	99.62
		2	150.00	0.00	0.00	100.00
		3	150.00	0.00	7.25	92.75
		4	150.00	0.00	0.26	99.74
		5	150.00	0.40	7.39	92.20
		6	150.00	0.00	0.02	99.98
	TOTAL		**900.00**	**0.07**	**2.55**	**97.38**
122	**KALINADI SUPA HPS**	1	50.00	1.55	0.00	98.45
		2	50.00	4.84	0.00	95.16
	TOTAL		**100.00**	**3.20**	**0.00**	**96.80**
123	**KODASALI HPS**	1	40.00	9.92	0.04	90.04
		2	40.00	5.35	0.04	94.61

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		3	40.00	5.26	0.03	94.71
	TOTAL		**120.00**	**6.84**	**0.04**	**93.12**
124	**LIGANAMAKKI HPS**	1	27.50	0.11	0.03	99.86
		2	27.50	100.00	0.00	0.00
	TOTAL		**55.00**	**50.06**	**0.01**	**49.93**
125	**MUNIRABAD HPS**	1	9.00	0.00	0.00	100.00
		2	9.00	0.00	0.00	100.00
		3	10.00	30.13	0.00	69.87
	TOTAL		**28.00**	**10.04**	**0.00**	**89.96**
126	**SHARAVATHI HPS**	1	103.50	0.10	0.19	99.71
		2	103.50	0.27	0.55	99.18
		3	103.50	0.41	0.09	99.50
		4	103.50	0.24	0.53	99.23
		5	103.50	2.46	0.03	97.51
		6	103.50	0.05	1.72	98.23
		7	103.50	1.32	0.35	98.33
		8	103.50	0.25	0.85	98.89
		9	103.50	1.02	0.34	98.64

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		10	103.50	3.08	1.12	95.79
	TOTAL		**1035.00**	**0.92**	**0.58**	**98.50**
127	**SIVASAMUNDRUM HPS**	1	3.00	0.10	0.00	99.90
		2	3.00	91.37	0.00	8.63
		3	3.00	0.05	0.00	99.95
		4	3.00	0.19	0.00	99.81
		5	3.00	0.17	0.00	99.83
		6	3.00	0.85	0.00	99.15
		7	6.00	100.00	0.00	0.00
		8	6.00	5.10	0.00	94.90
		9	6.00	100.00	0.00	0.00
		10	6.00	91.36	0.00	8.64
	TOTAL		**42.00**	**38.92**	**0.00**	**61.08**
128	**VARAHI HPS**	1	115.00	14.76	44.44	40.80
		2	115.00	14.73	0.00	85.27
		3	115.00	4.54	12.57	82.89
		4	115.00	8.48	0.03	91.49
	TOTAL		**460.00**	**10.63**	**14.26**	**75.11**

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
	KSEB					
129	**IDAMALAYAR HPS**	1	37.50	7.29	0.08	92.63
		2	37.50	6.16	1.37	92.47
	TOTAL		**75.00**	**6.73**	**0.72**	**92.55**
130	**IDUKKI HPS**	1	130.00	8.99	15.63	75.37
		2	130.00	6.27	0.01	93.72
		3	130.00	8.95	0.58	90.47
		4	130.00	9.25	1.59	89.17
		5	130.00	7.83	3.19	88.99
		6	130.00	5.89	1.53	92.58
	TOTAL		**780.00**	**7.86**	**3.75**	**88.38**
131	**KAKKAD HPS**	1	25.00	0.00	0.00	100.00
		2	25.00	0.00	0.00	100.00
	TOTAL		**50.00**	**0.00**	**0.00**	**100.00**
132	**KUTTIYADI ADDL EXTN**	1	50.00	6.90	2.56	90.54
		2	50.00	9.96	0.00	90.04
	TOTAL		**100.00**	**8.43**	**1.28**	**90.29**
133	**KUTTIYADI EXTN HPS**	4	50.00	9.70	0.21	90.09
	TOTAL		**50.00**	**9.70**	**0.21**	**90.09**

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
134	**KUTTIYADI HPS**	1	25.00	5.62	0.38	94.00
		2	25.00	2.19	0.36	97.46
		3	25.00	100.00	0.00	0.00
	TOTAL		**75.00**	**35.94**	**0.25**	**63.82**
135	**LOWER PERIYAR HPS**	1	60.00	2.94	2.85	94.21
		2	60.00	3.24	1.54	95.22
		3	60.00	0.20	0.00	99.80
	TOTAL		**180.00**	**2.13**	**1.46**	**96.41**
136	**NARIAMANGLAM HPS**	1	17.55	8.40	3.86	87.74
		2	17.55	9.77	0.11	90.12
		3	17.55	17.73	0.23	82.03
	TOTAL		**52.65**	**11.97**	**1.40**	**86.63**
137	**PALLIVASAL EXTN HPS**	1	30.00	0.00	0.00	100.00
		2	30.00	0.00	0.00	100.00
	TOTAL		**60.00**	**0.00**	**0.00**	**100.00**
138	**PALLIVASAL HPS**	1	5.00	0.00	0.00	100.00
		2	5.00	0.00	0.00	100.00
		3	5.00	0.27	0.35	99.38

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		4	7.50	0.55	0.20	99.25
		5	7.50	1.17	0.09	98.74
		6	7.50	1.29	0.01	98.71
	TOTAL		**37.50**	**0.55**	**0.11**	**99.35**
139	**PANNIAR HPS**	1	15.00	5.63	0.00	94.37
		2	15.00	8.81	0.00	91.19
	TOTAL		**30.00**	**7.22**	**0.00**	**92.78**
140	**PORINGALKUTTU HPS**	1	8.00	6.37	0.04	93.59
		2	8.00	6.94	1.15	91.92
		3	8.00	11.44	0.57	87.99
		4	8.00	6.03	0.53	93.44
	TOTAL		**32.00**	**7.70**	**0.57**	**91.73**
141	**SABARIGIRI HPS**	1	50.00	0.83	0.09	99.08
		2	50.00	0.37	0.25	99.37
		3	50.00	8.44	1.04	90.52
		4	50.00	5.39	0.43	94.18
		5	50.00	20.45	0.22	79.33
		6	50.00	4.76	0.26	94.99

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
	TOTAL		**300.00**	**6.71**	**0.38**	**92.91**
142	**SENGULAM HPS**	1	12.00	2.58	0.28	97.15
		2	12.00	39.54	0.00	60.46
		3	12.00	4.15	0.00	95.85
		4	12.00	11.90	0.00	88.10
	TOTAL		**48.00**	**14.54**	**0.07**	**85.39**
143	**SHOLAYAR HPS**	1	18.00	9.64	0.08	90.28
		2	18.00	8.38	0.28	91.33
		3	18.00	9.90	0.07	90.03
	TOTAL		**54.00**	**9.31**	**0.15**	**90.55**
144	**THOTTIYAR HPS**	1	10.00	3.82	0.20	95.98
		2	30.00	10.33	0.00	89.67
	TOTAL		**40.00**	**6.48**	**0.12**	**93.40**
	TANGEDCO					
145	**ALIYAR HPS**	1	60.00	1.13	0.69	98.18
	TOTAL		**60.00**	**1.13**	**0.69**	**98.18**
146	**BHAWANI BARRAGE-II HPS**	1	15.00	4.17	0.00	95.83
		2	15.00	10.30	0.00	89.70
	TOTAL		**30.00**	**7.24**	**0.00**	**92.76**

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
147	**BHAWANI BARRAGE-III HPS**	1	15.00	15.15	0.00	84.85
		2	15.00	13.84	0.00	86.16
	TOTAL		**30.00**	**14.50**	**0.00**	**85.50**
148	**BHAWANI KATTAL**	1	15.00	10.99	0.00	89.01
		2	15.00	2.88	0.00	97.12
	TOTAL		**30.00**	**6.93**	**0.00**	**93.07**
149	**KADAMPARI HPS**	1	100.00	0.00	100.00	0.00
		2	100.00	0.00	0.00	100.00
		3	100.00	0.00	0.00	100.00
		4	100.00	0.00	0.00	100.00
	TOTAL		**400.00**	**0.00**	**25.00**	**75.00**
150	**KODAYAR-I HPS**	1	60.00	0.00	0.03	99.97
	TOTAL		**60.00**	**0.00**	**0.03**	**99.97**
151	**KODAYAR-II HPS**	2	40.00	0.00	0.83	99.17
	TOTAL		**40.00**	**0.00**	**0.83**	**99.17**
152	**KUNDAH-I HPS**	1	20.00	0.00	0.00	100.00
		2	20.00	8.17	0.00	91.83
		3	20.00	4.08	0.00	95.92
	TOTAL		**60.00**	**4.08**	**0.00**	**95.92**

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
153	**KUNDAH-II HPS**	4	35.00	0.00	0.00	100.00
		5	35.00	0.00	0.00	100.00
		6	35.00	0.00	0.00	100.00
		7	35.00	0.00	0.00	100.00
		8	35.00	0.00	0.11	99.89
	TOTAL		**175.00**	**0.00**	**0.02**	**99.98**
154	**KUNDAH-III HPS**	9	60.00	0.00	0.00	100.00
		10	60.00	0.00	0.00	100.00
		11	60.00	0.00	0.00	100.00
	TOTAL		**180.00**	**0.00**	**0.00**	**100.00**
155	**KUNDAH-IV HPS**	12	50.00	11.25	0.00	88.75
		13	50.00	0.35	0.00	99.65
	TOTAL		**100.00**	**5.80**	**0.00**	**94.20**
156	**KUNDAH-V HPS**	14	20.00	16.16	0.00	83.84
		15	20.00	9.77	0.00	90.23
	TOTAL		**40.00**	**12.97**	**0.00**	**87.03**
157	**LOWER METTUR-I HPS**	1	15.00	2.85	0.00	97.15
		2	15.00	0.75	0.00	99.25

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
	TOTAL		**30.00**	**1.80**	**0.00**	**98.20**
158	**LOWER METTUR-II HPS**	3	15.00	2.54	0.00	97.46
		4	15.00	2.48	0.00	97.52
	TOTAL		**30.00**	**2.51**	**0.00**	**97.49**
159	**LOWER METTUR-III HPS**	5	15.00	34.73	0.00	65.27
		6	15.00	4.20	0.00	95.80
	TOTAL		**30.00**	**19.47**	**0.00**	**80.53**
160	**LOWER METTUR-IV HPS**	7	15.00	2.74	0.00	97.26
		8	15.00	2.82	0.00	97.18
	TOTAL		**30.00**	**2.78**	**0.00**	**97.22**
161	**METTUR DAM HPS**	1	12.50	0.00	0.00	100.00
		2	12.50	0.00	0.00	100.00
		3	12.50	0.00	0.00	100.00
		4	12.50	0.00	0.00	100.00
	TOTAL		**50.00**	**0.00**	**0.00**	**100.00**
162	**METTUR TUNNEL HPS**	1	50.00	0.00	0.00	100.00
		2	50.00	0.00	0.16	99.84
		3	50.00	0.00	0.00	100.00

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		4	50.00	0.00	0.00	100.00
	TOTAL		**200.00**	**0.00**	**0.04**	**99.96**
163	**MOYAR HPS**	1	12.00	0.11	0.49	99.40
		2	12.00	65.29	0.00	34.71
		3	12.00	40.08	0.00	59.92
	TOTAL		**36.00**	**35.16**	**0.16**	**64.68**
164	**PAPANASAM HPS**	1	8.00	3.05	0.00	96.95
		2	8.00	7.58	0.00	92.42
		3	8.00	8.47	0.00	91.53
		4	8.00	0.09	0.00	99.91
	TOTAL		**32.00**	**4.80**	**0.00**	**95.20**
165	**PARSON`S VALLEY HPS**	1	30.00	6.87	0.64	92.50
	TOTAL		**30.00**	**6.87**	**0.64**	**92.50**
166	**PERIYAR HPS**	1	42.00	7.59	0.00	92.41
		2	42.00	10.19	0.00	89.81
		3	42.00	8.93	0.00	91.07
		4	35.00	4.54	0.00	95.46
	TOTAL		**161.00**	**7.81**	**0.00**	**92.19**

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
167	**PYKARA HPS**	1	7.00	4.25	91.51	4.24
		2	7.00	0.00	21.61	78.39
		3	7.00	0.00	7.05	92.95
		4	13.60	0.00	0.00	100.00
		5	13.60	0.00	2.58	97.42
		6	11.00	0.00	99.73	0.27
	TOTAL		**59.20**	**0.71**	**37.08**	**62.21**
168	**PYKARA ULTMATE HPS**	1	50.00	0.35	2.17	97.48
		2	50.00	23.36	0.00	76.64
		3	50.00	0.28	0.00	99.72
	TOTAL		**150.00**	**8.00**	**0.72**	**91.28**
169	**SARKARPATHY HPS**	1	30.00	11.39	3.56	85.06
	TOTAL		**30.00**	**11.39**	**3.56**	**85.06**
170	**SHOLAYAR HPS (TN)**	1	35.00	0.00	0.00	100.00
		2	35.00	0.00	0.00	100.00
	TOTAL		**70.00**	**0.00**	**0.00**	**100.00**
171	**SURULIYAR HPS**	1	35.00	2.22	0.00	97.78
	TOTAL		**35.00**	**2.22**	**0.00**	**97.78**
	TSGENCO					

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
172	**LOWER JURALA HPS**	1	40.00	0.00	0.00	100.00
		2	40.00	0.00	0.17	99.83
		3	40.00	0.00	0.00	100.00
		4	40.00	0.00	0.00	100.00
		5	40.00	0.00	0.09	99.91
		6	40.00	0.00	0.01	99.99
	TOTAL		**240.00**	**0.00**	**0.04**	**99.96**
173	**NAGARJUN SGR HPS**	1	110.00	0.00	0.17	99.83
		2	100.80	0.00	77.32	22.68
		3	100.80	0.00	0.20	99.80
		4	100.80	0.00	0.35	99.65
		5	100.80	0.00	0.28	99.72
		6	100.80	0.00	0.02	99.98
		7	100.80	0.00	0.03	99.97
		8	100.80	0.00	0.14	99.86
	TOTAL		**815.60**	**0.00**	**9.82**	**90.18**
174	**NAGARJUN SGR LBC HPS**	1	30.00	0.00	5.41	94.59
		2	30.00	0.00	2.92	97.08

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
	TOTAL		**60.00**	**0.00**	**4.16**	**95.84**
175	**POCHAMPAD HPS**	1	9.00	0.00	0.00	100.00
		2	9.00	0.00	0.00	100.00
		3	9.00	0.00	0.00	100.00
		4	9.00	0.00	0.00	100.00
	TOTAL		**36.00**	**0.00**	**0.00**	**100.00**
176	**PRIYADARSHNI JURALA HPS**	1	39.00	0.00	0.00	100.00
		2	39.00	0.00	0.00	100.00
		3	39.00	0.00	100.00	0.00
		4	39.00	0.00	0.00	100.00
		5	39.00	0.00	0.00	100.00
		6	39.00	0.00	29.59	70.41
	TOTAL		**234.00**	**0.00**	**21.60**	**78.40**
177	**PULICHINTALA HPS**	1	30.00	0.00	0.00	100.00
		2	30.00	0.00	0.00	100.00
		3	30.00	0.00	35.12	64.88
		4	30.00	0.00	0.00	100.00
	TOTAL		**120.00**	**0.00**	**8.78**	**91.22**

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
178	SRISAILAM LB HPS	1	150.00	0.00	0.00	100.00
		2	150.00	0.00	0.00	100.00
		3	150.00	0.00	0.02	99.98
		4	150.00	0.00	35.60	64.40
		5	150.00	0.00	0.00	100.00
		6	150.00	0.00	0.00	100.00
	TOTAL		**900.00**	**0.00**	**5.94**	**94.06**
	Eastern					
	APGENCO					
179	MACHKUND HPS	1	17.00	0.00	43.61	56.39
		2	17.00	0.00	73.58	26.42
		3	17.00	21.27	0.00	78.73
		4	21.25	0.00	34.92	65.08
		5	21.25	0.00	97.53	2.47
		6	21.25	0.00	4.17	95.83
	TOTAL		**114.75**	**3.54**	**42.30**	**54.15**
	DEPL					
180	JORETHANG LOOP	1	48.00	5.75	0.18	94.07
		2	48.00	18.22	0.11	81.68

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
	TOTAL		**96.00**	**11.99**	**0.14**	**87.87**
	DVC					
181	**MAITHON HPS**	1	20.00	5.98	0.00	94.02
		2	23.20	23.94	0.60	75.46
		3	20.00	3.81	0.04	96.16
	TOTAL		**63.20**	**11.24**	**0.21**	**88.55**
182	**PANCHET HPS**	1	40.00	0.00	0.00	100.00
		2	40.00	0.00	0.07	99.93
	TOTAL		**80.00**	**0.00**	**0.03**	**99.97**
	GIPL					
183	**CHUZACHEN HPS**	1	55.00	0.21	0.26	99.54
		2	55.00	12.45	0.13	87.41
	TOTAL		**110.00**	**6.33**	**0.19**	**93.48**
	JUUNL					
184	**SUBERNREKHA-I HPS**	1	65.00	6.63	0.36	93.01
	TOTAL		**65.00**	**6.63**	**0.36**	**93.01**
185	**SUBERNREKHA-II HPS**	2	65.00	6.63	3.07	90.30
	TOTAL		**65.00**	**6.63**	**3.07**	**90.30**
	MBPC					
186	**RONGNICHU HPS**	1	56.50	9.67	0.11	90.22

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		2	56.50	9.71	0.32	89.96
	TOTAL		**113.00**	**9.69**	**0.22**	**90.09**
	NHPC					
187	**RANGIT HPS**	1	20.00	2.96	0.16	96.87
		2	20.00	11.05	0.26	88.69
		3	20.00	19.44	0.28	80.28
	TOTAL		**60.00**	**11.15**	**0.24**	**88.61**
188	**TEESTA LOW DAM-III HPS**	1	33.00	27.18	0.12	72.70
		2	33.00	14.87	0.00	85.13
		3	33.00	20.68	3.32	76.00
		4	33.00	45.98	0.04	53.99
	TOTAL		**132.00**	**27.18**	**0.87**	**71.95**
189	**TEESTA LOW DAM-IV HPS**	1	40.00	6.15	0.19	93.66
		2	40.00	4.80	0.01	95.20
		3	40.00	6.35	0.50	93.15
		4	40.00	6.81	0.04	93.15
	TOTAL		**160.00**	**6.03**	**0.19**	**93.79**
190	**TEESTA V HPS**	1	170.00	0.00	0.00	100.00
		2	170.00	0.00	0.00	100.00

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		3	170.00	0.00	0.00	100.00
	TOTAL		**510.00**	**0.00**	**0.00**	**100.00**
	OHPC					
191	**BALIMELA HPS**	1	60.00	5.02	0.00	94.98
		2	60.00	1.77	41.92	56.31
		3	60.00	17.55	0.00	82.45
		4	60.00	1.24	0.00	98.76
		5	60.00	16.35	0.00	83.65
		6	60.00	20.45	0.00	79.55
		7	75.00	5.24	0.00	94.76
		8	75.00	0.99	0.00	99.01
	TOTAL		**510.00**	**8.58**	**5.24**	**86.18**
192	**CHIPLIMA HPS**	1	24.00	100.00	0.00	0.00
		2	24.00	13.56	0.00	86.44
		3	24.00	5.03	0.00	94.97
	TOTAL		**72.00**	**39.53**	**0.00**	**60.47**
193	**HIRAKUD HPS**	1	49.50	14.60	0.00	85.40
		2	49.50	22.91	0.00	77.09

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		3	32.00	9.03	0.00	90.97
		4	32.00	11.21	0.00	88.79
		5	43.65	0.32	0.00	99.68
		6	43.65	5.44	0.00	94.56
		7	37.50	5.46	0.00	94.54
	TOTAL		**287.80**	**9.85**	**0.00**	**90.15**
194	**RENGALI HPS**	1	50.00	0.00	0.00	100.00
		2	50.00	0.00	0.00	100.00
		3	50.00	8.03	0.00	91.97
		4	50.00	10.54	0.00	89.46
		5	50.00	0.00	1.80	98.20
	TOTAL		**250.00**	**3.71**	**0.36**	**95.93**
195	**UPPER INDRAVATI HPS**	1	150.00	0.00	1.41	98.59
		2	150.00	0.00	0.00	100.00
		3	150.00	0.00	18.56	81.44
		4	150.00	0.00	0.00	100.00
	TOTAL		**600.00**	**0.00**	**4.99**	**95.01**
196	**UPPER KOLAB HPS**	1	80.00	18.78	0.00	81.22

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		2	80.00	0.00	0.00	100.00
		3	80.00	0.00	0.00	100.00
		4	80.00	0.00	0.00	100.00
	TOTAL		**320.00**	**4.70**	**0.00**	**95.30**
	SEPL					
197	**TASHIDING HPS**	1	48.50	2.57	0.00	97.43
		2	48.50	2.57	0.00	97.43
	TOTAL		**97.00**	**2.57**	**0.00**	**97.43**
	SKPPPL					
198	**DIKCHU HPS**	1	48.00	85.65	0.00	14.35
		2	48.00	58.36	0.00	41.64
	TOTAL		**96.00**	**72.00**	**0.00**	**28.00**
	TUL					
199	**TEESTA-III HPS**	1	200.00	0.00	0.00	100.00
		2	200.00	0.00	0.00	100.00
		3	200.00	0.00	0.00	100.00
		4	200.00	0.00	0.00	100.00
		5	200.00	0.00	0.00	100.00
		6	200.00	0.00	0.00	100.00

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
	TOTAL		**1200.00**	**0.00**	**0.00**	**100.00**
	WBSEDCL					
200	**JALDHAKA HPS ST-I**	1	9.00	0.00	100.00	0.00
		2	9.00	0.00	0.00	100.00
		3	9.00	0.00	0.00	100.00
		4	9.00	0.00	100.00	0.00
	TOTAL		**36.00**	**0.00**	**50.00**	**50.00**
201	**PURULIA PSS HPS**	1	225.00	0.09	0.00	99.91
		2	225.00	0.68	0.00	99.32
		3	225.00	25.60	0.00	74.40
		4	225.00	1.85	0.00	98.15
	TOTAL		**900.00**	**7.06**	**0.00**	**92.94**
202	**RAMMAM HPS**	1	12.50	0.00	0.00	100.00
		2	12.50	4.44	0.00	95.56
		3	12.50	0.00	0.00	100.00
		4	12.50	0.00	2.88	97.12
	TOTAL		**50.00**	**1.11**	**0.72**	**98.17**
	North Eastern					
	APGCL					

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
203	**KARBI LANGPI HPS**	1	50.00	0.65	0.10	99.25
		2	50.00	5.63	0.20	94.17
	TOTAL		**100.00**	**3.14**	**0.15**	**96.71**
	MeECL					
204	**KYRDEMKULAI HPS**	1	30.00	0.00	8.39	91.61
		2	30.00	1.03	1.98	96.99
	TOTAL		**60.00**	**0.52**	**5.19**	**94.30**
205	**MYNTDU(LESHKA) St-1 HPS**	1	42.00	18.49	0.95	80.56
		2	42.00	16.66	2.25	81.09
		3	42.00	9.07	0.00	90.93
	TOTAL		**126.00**	**14.74**	**1.07**	**84.19**
206	**NEW UMTRU HPS**	1	20.00	8.16	0.00	91.84
		2	20.00	7.61	0.46	91.94
	TOTAL		**40.00**	**7.88**	**0.23**	**91.89**
207	**UMIAM HPS ST-I**	1	9.00	6.35	0.76	92.88
		2	9.00	0.77	0.76	98.46
		3	9.00	2.80	13.64	83.56
		4	9.00	2.47	0.76	96.76
	TOTAL		**36.00**	**3.10**	**3.98**	**92.92**

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
208	**UMIAM HPS ST-IV**	7	30.00	4.04	34.57	61.40
		8	30.00	3.22	7.20	89.57
	TOTAL		**60.00**	**3.63**	**20.89**	**75.48**
	NEEPCO.					
209	**DOYANG HPS**	1	25.00	4.53	0.77	94.69
		2	25.00	0.00	0.38	99.62
		3	25.00	4.26	0.69	95.06
	TOTAL		**75.00**	**2.93**	**0.61**	**96.46**
210	**KAMENG HPS**	1	150.00	3.26	2.32	94.42
		2	150.00	0.00	78.83	21.17
		3	150.00	3.70	0.26	96.04
		4	150.00	11.33	8.54	80.13
	TOTAL		**600.00**	**4.57**	**22.49**	**72.94**
211	**KHONDONG HPS**	1	25.00	98.36	0.00	1.64
		2	25.00	98.35	0.00	1.65
	TOTAL		**50.00**	**98.36**	**0.00**	**1.64**
212	**KOPILI HPS**	1	50.00	1.54	15.99	82.47
		2	50.00	2.91	0.27	96.83
		3	50.00	2.61	3.00	94.39

S.No.	STATION / CORPORATION	UNIT No.	INSTALLED CAPAPCITY (MW)	PLANNED MAINTENANCE (P.M) (%)	FORCED OUTAGE (F.O) (%)	OPERATING AVAILABILITY (100-FO-PM)
		4	50.00	2.24	2.33	95.43
	TOTAL		**200.00**	**2.33**	**5.40**	**92.28**
213	**PARE**	1	55.00	6.04	0.04	93.92
		2	55.00	4.40	0.04	95.57
	TOTAL		**110.00**	**5.22**	**0.04**	**94.74**
214	**RANGANADI HPS**	1	135.00	17.14	0.64	82.22
		2	135.00	17.08	0.72	82.20
		3	135.00	17.61	0.66	81.73
	TOTAL		**405.00**	**17.27**	**0.67**	**82.05**
215	**TUIRIAL HPS**	1	30.00	4.33	0.81	94.86
		2	30.00	2.91	0.85	96.24
	TOTAL		**60.00**	**3.62**	**0.83**	**95.55**
	NHPC					
216	**LOKTAK HPS**	1	35.00	1.29	0.31	98.41
		2	35.00	1.58	0.29	98.13
		3	35.00	2.00	1.07	96.93
	TOTAL		**105.00**	**1.62**	**0.56**	**97.82**

CHAPTER-7

MISCELLANEOUS OUTAGES OF HE UNITS

CHAPTER-7

MISCELLANEOUS OUTAGES OF HE UNITS

7.1 Non-availability of Hydel generating units due to reasons other than planned maintenance and forced outages of unit components, auxiliary and other equipments and civil structures has been defined as "Miscellaneous Non-Availability". This may be due to shortage of water, high silt content in the river, electrical grid disturbance, low system demand, disaster/natural calamity, reserve shutdown, transmission constraints & power evacuation problems, high tailrace level, strikes, etc. constitutes the miscellaneous outages. The station-wise details of miscellaneous non-availability during 2024-25 is given at Annex-7.1 and summarized below in Table 7.1.

TABLE 7.1

MISCELLANEOUS OUTAGES
FOR PERIOD: 2024-25

S. No.	Causes of Miscellaneous Outage	Duration of Outage (Hours)	% of Total Outage
	NOT ASSOCIATED WITH THE EQUIPMENT AND CIVIL STRUCTURE		
1	OTHER MISC.	45,984.56	4.28
2	GRID CONSTRAINT	58,820.95	5.84
3	WATER CONSTRAINTS	888,933.71	89.88
	TOTAL	**993,739.22**	**100.00**

7.2 The overall non-availability on account of miscellaneous outages has been estimated as 0.35%. It was highest (2.37%) in case of H.E. Stations from GSECL followed by RRVUNL (0.84%), BBMB (4.61%), SJVNL (0.24%), etc. However, miscellaneous non-availability being beyond the control of utilities, does not have not any impact on the operating availability of H.E. Stations.

CENTRAL ELECTRICITY AUTHORITY
Hydro WING
Hydro Project Planning & Investigation Division

Annex 7.1

NON-AVAILABILITY OF HYDROELECTRIC UNITS DUE TO REASONS OTHER THAN PLANNED MAINTENANACE AND FORCED OUTAGE DURING 2024-25

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
	Northern			
	ADHPL			
1	**ALLAIN DUHANGAN HPS**	1	96.00	0.09
		2	96.00	0.09
	TOTAL		**192.00**	**0.09**
	AHPC (GVK)			
2	**SHRINAGAR HPS**	1	82.50	0.00
		2	82.50	0.00
		3	82.50	0.00
		4	82.50	0.00
	TOTAL		**330.00**	**0.00**
	BBMB			
3	**BHAKRA LEFT HPS**	1	126.00	0.00
		2	126.00	0.00
		3	126.00	0.00
		4	126.00	0.00

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		5	126.00	0.00
	TOTAL		**630.00**	**0.00**
4	**BHAKRA RIGHT HPS**	10	157.00	0.00
		6	157.00	0.00
		7	157.00	13.99
		8	157.00	0.00
		9	157.00	0.00
	TOTAL		**785.00**	**2.80**
5	**DEHAR HPS**	1	165.00	0.00
		2	165.00	0.00
		3	165.00	0.00
		4	165.00	0.00
		5	165.00	0.00
		6	165.00	0.00
	TOTAL		**990.00**	**0.00**
6	**GANGUWAL HPS**	1	29.25	1.64
		2	24.20	0.00
		3	24.20	0.00
	TOTAL		**77.65**	**0.55**
7	**KOTLA HPS**	1	29.25	0.00

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		2	24.20	0.00
		3	24.20	0.00
	TOTAL		**77.65**	**0.00**
8	**PONG HPS**	1	66.00	0.00
		2	66.00	0.00
		3	66.00	2.81
		4	66.00	0.00
		5	66.00	0.00
		6	66.00	0.00
	TOTAL		**396.00**	**0.47**
	BVPCL			
9	**UHL-III HPS**	1	33.33	0.00
		2	33.33	0.00
		3	33.33	0.00
	TOTAL		**99.99**	**0.00**
	E.P.P.L.			
10	**MALANA-II HPS**	1	50.00	108.71
		2	50.00	8.02
	TOTAL		**100.00**	**58.36**
	GBHPPL			

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
11	**BUDHIL HPS**	1	35.00	0.00
		2	35.00	0.00
	TOTAL		**70.00**	**0.00**
	GMR BHHPL			
12	**BAJOLI HOLI HPS**	1	60.00	14.42
		2	60.00	9.69
		3	60.00	43.54
	TOTAL		**180.00**	**22.55**
	HBPCL			
13	**BASPA HPS**	1	100.00	0.00
		2	100.00	0.00
		3	100.00	0.00
	TOTAL		**300.00**	**0.00**
14	**KARCHAM WANGTOO HPS**	1	261.25	0.00
		2	261.25	0.00
		3	261.25	0.00
		4	261.25	0.00
	TOTAL		**1045.00**	**0.00**
	HPPCL			
15	**KASHANG INTEGRATED HEP**	1	65.00	0.00

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		2	65.00	0.00
		3	65.00	0.00
	TOTAL		**195.00**	**0.00**
16	**SAINJ HPS**	1	50.00	0.00
		2	50.00	0.00
	TOTAL		**100.00**	**0.00**
17	**SAWRA KUDDU HPS**	1	37.00	0.00
		2	37.00	0.00
		3	37.00	0.00
	TOTAL		**111.00**	**0.00**
	HPSEB			
18	**BASSI HPS**	1	16.50	0.00
		2	16.50	0.00
		3	16.50	0.00
		4	16.50	0.27
	TOTAL		**66.00**	**0.07**
19	**GIRI BATA HPS**	1	30.00	0.27
		2	30.00	0.00
	TOTAL		**60.00**	**0.14**
20	**LARJI HPS**	1	42.00	0.00

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		2	42.00	0.00
		3	42.00	100.27
	TOTAL		**126.00**	**33.42**
21	**SANJAY HPS**	1	40.00	0.00
		2	40.00	5.48
		3	40.00	3.91
	TOTAL		**120.00**	**3.13**
	HSPCL			
22	**SORANG HPS**	1	50.00	0.00
		2	50.00	0.00
	TOTAL		**100.00**	**0.00**
	IAEPL			
23	**CHANJU-I HPS**	1	12.00	0.00
		2	12.00	0.00
		3	12.00	0.00
	TOTAL		**36.00**	**0.00**
	JKSPDC			
24	**BAGLIHAR HPS**	1	150.00	2.32
		2	150.00	20.14
		3	150.00	20.34

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
	TOTAL		**450.00**	**14.26**
25	**BAGLIHAR II HPS**	1	150.00	1.04
		2	150.00	1.45
		3	150.00	100.00
	TOTAL		**450.00**	**34.16**
26	**LOWER JHELUM HPS**	1	35.00	0.00
		2	35.00	0.00
		3	35.00	100.00
	TOTAL		**105.00**	**33.33**
27	**UPPER SINDH-II HPS**	3	35.00	0.00
		4	35.00	0.00
		5	35.00	0.00
	TOTAL		**105.00**	**0.00**
	JPPVL			
28	**VISHNU PRAYAG HPS**	1	100.00	0.00
		2	100.00	0.00
		3	100.00	0.00
		4	100.00	0.00
	TOTAL		**400.00**	**0.00**
	L&T			

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
29	**SINGOLI BHATWARI HPS**	1	33.00	0.00
		2	33.00	0.00
		3	33.00	0.00
	TOTAL		**99.00**	**0.00**
	MPCL			
30	**MALANA HPS**	1	43.00	0.00
		2	43.00	0.00
	TOTAL		**86.00**	**0.00**
	NHPC			
31	**BAIRA SIUL HPS**	1	60.00	255.67
		2	60.00	50.09
		3	60.00	46.93
	TOTAL		**180.00**	**117.56**
32	**CHAMERA-I HPS**	1	180.00	46.00
		2	180.00	58.31
		3	180.00	42.11
	TOTAL		**540.00**	**48.81**
33	**CHAMERA-II HPS**	1	100.00	150.00
		2	100.00	26.66
		3	100.00	45.92

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
	TOTAL		**300.00**	**74.19**
34	**CHAMERA-III HPS**	1	77.00	46.93
		2	77.00	154.14
		3	77.00	41.02
	TOTAL		**231.00**	**80.69**
35	**CHUTAK HPS**	1	11.00	37.64
		2	11.00	436.31
		3	11.00	237.43
		4	11.00	41.47
	TOTAL		**44.00**	**188.21**
36	**DHAULI GANGA HPS**	1	70.00	40.57
		2	70.00	43.52
		3	70.00	55.28
		4	70.00	49.90
	TOTAL		**280.00**	**47.32**
37	**DULHASTI HPS**	1	130.00	30.08
		2	130.00	21.66
		3	130.00	26.13
	TOTAL		**390.00**	**25.96**
38	**KISHANGANGA HPS**	1	110.00	143.76

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		2	110.00	36.97
		3	110.00	42.52
	TOTAL		**330.00**	**74.42**
39	**NIMMO BAZGO HPS**	1	15.00	213.75
		2	15.00	128.03
		3	15.00	133.09
	TOTAL		**45.00**	**158.29**
40	**PARBATI-II HPS**	1	200.00	0.00
		2	200.00	0.00
		3	200.00	0.00
	TOTAL		**600.00**	**0.00**
41	**PARBATI-III HPS**	1	130.00	49.41
		2	130.00	47.74
		3	130.00	458.03
		4	130.00	180.23
	TOTAL		**520.00**	**183.85**
42	**SALAL HPS**	1	115.00	35.38
		2	115.00	35.72
		3	115.00	237.72
		4	115.00	21.14

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		5	115.00	44.31
		6	115.00	28.63
	TOTAL		**690.00**	**67.15**
43	**SEWA-II HPS**	1	40.00	155.67
		2	40.00	61.98
		3	40.00	57.08
	TOTAL		**120.00**	**91.58**
44	**TANAKPUR HPS**	1	31.40	17.95
		2	31.40	12.53
		3	31.40	17.33
	TOTAL		**94.20**	**15.94**
45	**URI-I HPS**	1	120.00	8.85
		2	120.00	13.62
		3	120.00	2.33
		4	120.00	5.37
	TOTAL		**480.00**	**7.54**
46	**URI-II HPS**	1	60.00	221.93
		2	60.00	19.40
		3	60.00	23.62
		4	60.00	36.76

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
	TOTAL		**240.00**	**75.43**
	NTPC Ltd.			
47	**KOLDAM**	1	200.00	49.29
		2	200.00	51.29
		3	200.00	57.29
		4	200.00	45.33
	TOTAL		**800.00**	**50.80**
	PSPCL			
48	**ANANDPUR SAHIB-I HPS**	1	33.50	31.90
		2	33.50	35.40
	TOTAL		**67.00**	**33.65**
49	**ANANDPUR SAHIB-II HPS**	3	33.50	0.00
		4	33.50	0.00
	TOTAL		**67.00**	**0.00**
50	**MUKERIAN-I HPS**	1	15.00	0.00
		2	15.00	0.00
		3	15.00	0.00
	TOTAL		**45.00**	**0.00**
51	**MUKERIAN-II HPS**	4	15.00	0.00
		5	15.00	0.00

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		6	15.00	0.00
	TOTAL		**45.00**	**0.00**
52	**MUKERIAN-III HPS**	7	19.50	0.00
		8	19.50	0.00
		9	19.50	0.00
	TOTAL		**58.50**	**0.00**
53	**MUKERIAN-IV HPS**	10	19.50	0.00
		11	19.50	0.00
		12	19.50	0.00
	TOTAL		**58.50**	**0.00**
54	**RANJIT SAGAR HPS**	1	150.00	0.00
		2	150.00	0.30
		3	150.00	0.00
		4	150.00	0.11
	TOTAL		**600.00**	**0.10**
55	**SHANAN HPS**	1	15.00	11.51
		2	15.00	7.09
		3	15.00	26.35
		4	15.00	16.71
		5	50.00	10.70

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
	TOTAL		**110.00**	**14.47**
	RRVUNL			
56	**JAWAHAR SAGAR HPS**	1	33.00	0.00
		2	33.00	0.00
		3	33.00	0.00
	TOTAL		**99.00**	**0.00**
57	**MAHI BAJAJ-I HPS**	1	25.00	62.83
		2	25.00	50.74
	TOTAL		**50.00**	**56.79**
58	**MAHI BAJAJ-II HPS**	3	45.00	138.92
		4	45.00	45.09
	TOTAL		**90.00**	**92.01**
59	**R P SAGAR HPS**	1	43.00	0.00
		2	43.00	0.00
		3	43.00	0.00
		4	43.00	0.00
	TOTAL		**172.00**	**0.00**
	SJVNL			
60	**NAITWAR MORI HPS**	1	30.00	0.00
		2	30.00	0.00

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
	TOTAL		**60.00**	**0.00**
61	**NATHPA JHAKRI HPS**	1	250.00	37.93
		2	250.00	141.16
		3	250.00	47.31
		4	250.00	41.75
		5	250.00	51.93
		6	250.00	138.72
	TOTAL		**1500.00**	**76.47**
62	**RAMPUR HPS**	1	68.67	35.55
		2	68.67	48.97
		3	68.67	46.65
		4	68.67	47.76
		5	68.67	47.95
		6	68.67	35.09
	TOTAL		**412.02**	**43.66**
	THDC			
63	**KOTESHWAR HPS**	1	100.00	0.00
		2	100.00	0.00
		3	100.00	0.00
		4	100.00	0.00

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
	TOTAL		**400.00**	**0.00**
64	**TEHRI ST-1 HPS**	1	250.00	0.00
		2	250.00	9.09
		3	250.00	0.00
		4	250.00	0.00
	TOTAL		**1000.00**	**2.27**
	UJVNL			
65	**CHIBRO (YAMUNA) HPS**	1	60.00	6.04
		2	60.00	2.94
		3	60.00	6.31
		4	60.00	2.29
	TOTAL		**240.00**	**4.39**
66	**CHILLA HPS**	1	36.00	4.96
		2	36.00	3.22
		3	36.00	5.40
		4	36.00	5.68
	TOTAL		**144.00**	**4.82**
67	**DHAKRANI HPS**	1	11.25	0.00
		2	11.25	4.01
		3	11.25	2.62

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
	TOTAL		**33.75**	**2.21**
68	**DHALIPUR HPS**	1	17.00	22.49
		2	17.00	139.98
		3	17.00	319.22
	TOTAL		**51.00**	**160.56**
69	**KHATIMA HPS**	1	13.80	9.09
		2	13.80	13.03
		3	13.80	16.24
	TOTAL		**41.40**	**12.79**
70	**KHODRI HPS**	1	30.00	0.00
		2	30.00	0.00
		3	30.00	0.00
		4	30.00	0.00
	TOTAL		**120.00**	**0.00**
71	**KULHAL HPS**	1	10.00	0.00
		2	10.00	0.00
		3	10.00	19.50
	TOTAL		**30.00**	**6.50**
72	**MANERI BHALI-I HPS**	1	30.00	23.40
		2	30.00	15.16

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		3	30.00	13.50
	TOTAL		**90.00**	**17.35**
73	**MANERI BHALI-II HPS**	1	76.00	0.00
		2	76.00	0.00
		3	76.00	0.00
		4	76.00	0.00
	TOTAL		**304.00**	**0.00**
74	**RAMGANGA HPS**	1	66.00	44.45
		2	66.00	26.11
		3	66.00	22.38
	TOTAL		**198.00**	**30.98**
75	**VYASI HPS**	1	60.00	0.00
		2	60.00	0.00
	TOTAL		**120.00**	**0.00**
	UPJVNL			
76	**KHARA HPS**	1	24.00	15.86
		2	24.00	1.85
		3	24.00	3.20
	TOTAL		**72.00**	**6.97**
77	**MATATILA HPS**	1	10.20	0.00

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		2	10.20	0.00
		3	10.20	0.00
	TOTAL		**30.60**	**0.00**
78	**OBRA HPS**	1	33.00	63.57
		2	33.00	45.70
		3	33.00	53.66
	TOTAL		**99.00**	**54.31**
79	**RIHAND HPS**	1	50.00	0.00
		2	50.00	0.00
		3	50.00	0.00
		4	50.00	0.00
		5	50.00	0.00
		6	50.00	0.00
	TOTAL		**300.00**	**0.00**
	Western			
	CSPGCL			
80	**HASDEOBANGO HPS**	1	40.00	0.00
		2	40.00	0.00
		3	40.00	0.00
	TOTAL		**120.00**	**0.00**

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
	DLHP			
81	**BHANDARDHARA HPS ST-II**	2	34.00	0.00
	TOTAL		**34.00**	**0.00**
	GSECL			
82	**KADANA HPS**	1	60.00	0.00
		2	60.00	0.00
		3	60.00	0.00
		4	60.00	0.00
	TOTAL		**240.00**	**0.00**
83	**UKAI HPS**	1	75.00	58.95
		2	75.00	58.46
		3	75.00	81.19
		4	75.00	73.61
	TOTAL		**300.00**	**68.05**
	MAHAGENCO			
84	**BHIRA TAIL RACE HPS**	1	40.00	0.00
		2	40.00	3.33
	TOTAL		**80.00**	**1.66**
85	**GHATGHAR PSS HPS**	1	125.00	21.21
		2	125.00	7.20

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
	TOTAL		**250.00**	**14.21**
86	**KOYNA DPH HPS**	1	18.00	0.00
		2	18.00	0.00
	TOTAL		**36.00**	**0.00**
87	**KOYNA-I&II HPS**	1	70.00	0.00
		2	70.00	0.00
		3	70.00	0.00
		4	70.00	0.00
		5	80.00	0.00
		6	80.00	0.00
		7	80.00	0.00
		8	80.00	0.00
	TOTAL		**600.00**	**0.00**
88	**KOYNA-III HPS**	1	80.00	0.00
		2	80.00	0.00
		3	80.00	0.00
		4	80.00	0.00
	TOTAL		**320.00**	**0.00**
89	**KOYNA-IV HPS**	1	250.00	0.00
		2	250.00	0.00

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		3	250.00	0.00
		4	250.00	0.00
	TOTAL		**1000.00**	**0.00**
90	**TILLARI HPS**	1	60.00	0.00
	TOTAL		**60.00**	**0.00**
91	**VAITARNA HPS**	1	60.00	0.00
	TOTAL		**60.00**	**0.00**
	MPPGCL			
92	**BANSAGAR-II HPS**	1	15.00	0.00
		2	15.00	0.20
	TOTAL		**30.00**	**0.10**
93	**BANSAGAR-III HPS**	1	20.00	26.80
		2	20.00	27.33
		3	20.00	22.59
	TOTAL		**60.00**	**25.57**
94	**BANSAGAR TONS-I HPS**	1	105.00	0.00
		2	105.00	0.00
		3	105.00	0.00
	TOTAL		**315.00**	**0.00**
95	**BARGI HPS**	1	45.00	0.00

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		2	45.00	0.00
	TOTAL		**90.00**	**0.00**
96	**GANDHI SAGAR HPS**	1	23.00	36.49
		2	23.00	76.29
		3	23.00	0.00
		4	23.00	37.33
		5	23.00	57.28
	TOTAL		**115.00**	**41.48**
97	**MADHIKHERA HPS**	1	20.00	46.24
		2	20.00	46.33
		3	20.00	46.52
	TOTAL		**60.00**	**46.36**
98	**PENCH HPS**	1	80.00	11.64
		2	80.00	11.62
	TOTAL		**160.00**	**11.63**
99	**RAJGHAT HPS**	1	15.00	50.40
		2	15.00	56.62
		3	15.00	29.29
	TOTAL		**45.00**	**45.44**
	NHDC			

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
100	**INDIRA SAGAR HPS**	1	125.00	0.25
		2	125.00	0.00
		3	125.00	0.00
		4	125.00	0.45
		5	125.00	0.00
		6	125.00	0.09
		7	125.00	0.00
		8	125.00	0.00
	TOTAL		**1000.00**	**0.10**
101	**OMKARESHWAR HPS**	1	65.00	0.00
		2	65.00	0.00
		3	65.00	0.00
		4	65.00	0.00
		5	65.00	0.00
		6	65.00	0.00
		7	65.00	0.14
		8	65.00	0.00
	TOTAL		**520.00**	**0.02**
	SSNNL			
102	**S SAROVAR CHPH HPS**	1	50.00	0.00

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		2	50.00	0.00
		3	50.00	0.00
		4	50.00	0.00
		5	50.00	0.00
	TOTAL		**250.00**	**0.00**
103	**S SAROVAR RBPH HPS**	1	200.00	0.00
		2	200.00	0.00
		3	200.00	0.00
		4	200.00	0.00
		5	200.00	0.00
		6	200.00	0.00
	TOTAL		**1200.00**	**0.00**
	TATA MAH.			
104	**BHIRA HPS**	1	25.00	20.50
		2	25.00	0.00
		3	25.00	0.00
		4	25.00	0.00
		5	25.00	0.00
		6	25.00	0.00
	TOTAL		**150.00**	**3.42**

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
105	**BHIRA PSS HPS**	1	150.00	0.00
	TOTAL		**150.00**	**0.00**
106	**BHIVPURI HPS**	1	24.00	0.00
		2	24.00	0.00
		3	24.00	0.00
		4	1.50	0.00
		5	1.50	0.00
	TOTAL		**75.00**	**0.00**
107	**KHOPOLI HPS**	1	24.00	0.00
		2	24.00	0.00
		3	24.00	0.00
	TOTAL		**72.00**	**0.00**
	Southern			
	APGENCO			
108	**HAMPI HPS**	1	9.00	0.00
		2	9.00	0.00
		3	9.00	0.00
		4	9.00	0.00
	TOTAL		**36.00**	**0.00**
109	**LOWER SILERU HPS**	1	115.00	0.00

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		2	115.00	0.00
		3	115.00	0.00
		4	115.00	0.00
	TOTAL		**460.00**	**0.00**
110	**NAGARJUN SGR RBC HPS**	1	30.00	0.00
		2	30.00	0.00
		3	30.00	0.00
	TOTAL		**90.00**	**0.00**
111	**NAGARJUN SGR TPD**	1	25.00	0.00
		2	25.00	0.00
	TOTAL		**50.00**	**0.00**
112	**SRISAILAM HPS**	1	110.00	0.00
		2	110.00	0.00
		3	110.00	0.00
		4	110.00	0.00
		5	110.00	0.00
		6	110.00	0.00
		7	110.00	0.00
	TOTAL		**770.00**	**0.00**
113	**T B DAM HPS**	1	9.00	100.00

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		2	9.00	31.22
		3	9.00	41.59
		4	9.00	66.33
	TOTAL		**36.00**	**59.78**
114	**UPPER SILERU HPS**	1	60.00	0.00
		2	60.00	0.00
		3	60.00	0.00
		4	60.00	0.00
	TOTAL		**240.00**	**0.00**
	KPCL			
115	**ALMATTI DPH HPS**	1	15.00	56.42
		2	55.00	21.96
		3	55.00	29.26
		4	55.00	35.31
		5	55.00	38.08
		6	55.00	44.68
	TOTAL		**290.00**	**37.62**
116	**BHADRA HPS**	1	2.00	56.06
		2	12.00	20.63
		3	12.00	4.14

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
	TOTAL		**26.00**	**26.94**
117	**GERUSUPPA HPS**	1	60.00	0.00
		2	60.00	0.00
		3	60.00	0.00
		4	60.00	0.00
	TOTAL		**240.00**	**0.00**
118	**GHAT PRABHA HPS**	1	16.00	41.89
		2	16.00	46.46
	TOTAL		**32.00**	**44.18**
119	**JOG HPS**	1	13.20	2.21
		2	13.20	3.84
		3	13.20	6.73
		4	13.20	200.27
		5	21.60	19.94
		6	21.60	8.43
		7	21.60	2.07
		8	21.60	1.95
	TOTAL		**139.20**	**30.68**
120	**KADRA HPS**	1	50.00	53.30
		2	50.00	55.73

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		3	50.00	54.70
	TOTAL		**150.00**	**54.57**
121	**KALINADI HPS**	1	150.00	41.46
		2	150.00	17.66
		3	150.00	36.09
		4	150.00	12.88
		5	150.00	18.20
		6	150.00	29.94
	TOTAL		**900.00**	**26.04**
122	**KALINADI SUPA HPS**	1	50.00	4.21
		2	50.00	2.11
	TOTAL		**100.00**	**3.16**
123	**KODASALI HPS**	1	40.00	38.94
		2	40.00	46.23
		3	40.00	41.70
	TOTAL		**120.00**	**42.29**
124	**LIGANAMAKKI HPS**	1	27.50	0.00
		2	27.50	0.00
	TOTAL		**55.00**	**0.00**
125	**MUNIRABAD HPS**	1	9.00	34.95

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		2	9.00	35.48
		3	10.00	0.00
	TOTAL		**28.00**	**23.48**
126	**SHARAVATHI HPS**	1	103.50	4.62
		10	103.50	11.58
		2	103.50	6.21
		3	103.50	10.09
		4	103.50	13.81
		5	103.50	8.05
		6	103.50	2.68
		7	103.50	3.92
		8	103.50	9.30
		9	103.50	14.80
	TOTAL		**1035.00**	**8.51**
127	**SIVASAMUNDRUM HPS**	1	3.00	0.00
		10	6.00	0.00
		2	3.00	0.00
		3	3.00	0.00
		4	3.00	0.00
		5	3.00	0.00

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		6	3.00	0.00
		7	6.00	0.00
		8	6.00	0.00
		9	6.00	0.00
	TOTAL		**42.00**	**0.00**
128	**VARAHI HPS**	1	115.00	0.32
		2	115.00	0.93
		3	115.00	7.17
		4	115.00	103.90
	TOTAL		**460.00**	**28.08**
	KSEB			
129	**IDAMALAYAR HPS**	1	37.50	16.68
		2	37.50	15.82
	TOTAL		**75.00**	**16.25**
130	**IDUKKI HPS**	1	130.00	0.00
		2	130.00	1.38
		3	130.00	0.00
		4	130.00	0.06
		5	130.00	0.00
		6	130.00	0.11

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
	TOTAL		**780.00**	**0.26**
131	**KAKKAD HPS**	1	25.00	0.00
		2	25.00	0.00
	TOTAL		**50.00**	**0.00**
132	**KUTTIYADI ADDL EXTN**	1	50.00	0.60
		2	50.00	0.08
	TOTAL		**100.00**	**0.34**
133	**KUTTIYADI EXTN HPS**	4	50.00	0.10
	TOTAL		**50.00**	**0.10**
134	**KUTTIYADI HPS**	1	25.00	5.37
		2	25.00	5.16
		3	25.00	0.00
	TOTAL		**75.00**	**3.51**
135	**LOWER PERIYAR HPS**	1	60.00	0.00
		2	60.00	0.55
		3	60.00	1.54
	TOTAL		**180.00**	**0.70**
136	**NARIAMANGLAM HPS**	1	17.55	0.71
		2	17.55	1.30
		3	17.55	0.00

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
	TOTAL		**52.65**	**0.67**
137	**PALLIVASAL EXTN HPS**	1	30.00	0.00
		2	30.00	0.00
	TOTAL		**60.00**	**0.00**
138	**PALLIVASAL HPS**	1	5.00	0.00
		2	5.00	0.00
		3	5.00	0.00
		4	7.50	0.00
		5	7.50	0.00
		6	7.50	0.00
	TOTAL		**37.50**	**0.00**
139	**PANNIAR HPS**	1	15.00	0.00
		2	15.00	0.00
	TOTAL		**30.00**	**0.00**
140	**PORINGALKUTTU HPS**	1	8.00	0.08
		2	8.00	0.00
		3	8.00	0.00
		4	8.00	0.01
	TOTAL		**32.00**	**0.02**
141	**SABARIGIRI HPS**	1	50.00	25.21

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		2	50.00	44.04
		3	50.00	29.07
		4	50.00	25.29
		5	50.00	23.23
		6	50.00	30.92
	TOTAL		**300.00**	**29.63**
142	**SENGULAM HPS**	1	12.00	0.25
		2	12.00	0.00
		3	12.00	0.00
		4	12.00	33.64
	TOTAL		**48.00**	**8.47**
143	**SHOLAYAR HPS**	1	18.00	16.99
		2	18.00	23.77
		3	18.00	28.15
	TOTAL		**54.00**	**22.97**
144	**THOTTIYAR HPS**	1	10.00	0.00
		2	30.00	0.00
	TOTAL		**40.00**	**0.00**
	TANGEDCO			
145	**ALIYAR HPS**	1	60.00	0.00

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
	TOTAL		**60.00**	**0.00**
146	**BHAWANI BARRAGE-II HPS**	1	15.00	0.00
		2	15.00	0.00
	TOTAL		**30.00**	**0.00**
147	**BHAWANI BARRAGE-III HPS**	1	15.00	0.00
		2	15.00	0.00
	TOTAL		**30.00**	**0.00**
148	**BHAWANI KATTAL**	1	15.00	0.00
		2	15.00	0.00
	TOTAL		**30.00**	**0.00**
149	**KADAMPARI HPS**	1	100.00	0.00
		2	100.00	0.00
		3	100.00	0.00
		4	100.00	0.00
	TOTAL		**400.00**	**0.00**
150	**KODAYAR-I HPS**	1	60.00	0.00
	TOTAL		**60.00**	**0.00**
151	**KODAYAR-II HPS**	2	40.00	0.69
	TOTAL		**40.00**	**0.69**
152	**KUNDAH-I HPS**	1	20.00	6.23

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		2	20.00	1.08
		3	20.00	4.13
	TOTAL		**60.00**	**3.81**
153	**KUNDAH-II HPS**	4	35.00	0.00
		5	35.00	0.00
		6	35.00	0.00
		7	35.00	0.00
		8	35.00	0.00
	TOTAL		**175.00**	**0.00**
154	**KUNDAH-III HPS**	10	60.00	0.00
		11	60.00	0.00
		9	60.00	0.00
	TOTAL		**180.00**	**0.00**
155	**KUNDAH-IV HPS**	12	50.00	0.00
		13	50.00	0.00
	TOTAL		**100.00**	**0.00**
156	**KUNDAH-V HPS**	14	20.00	0.00
		15	20.00	0.00
	TOTAL		**40.00**	**0.00**
157	**LOWER METTUR-I HPS**	1	15.00	0.00

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		2	15.00	0.00
	TOTAL		**30.00**	**0.00**
158	**LOWER METTUR-II HPS**	3	15.00	0.00
		4	15.00	0.00
	TOTAL		**30.00**	**0.00**
159	**LOWER METTUR-III HPS**	5	15.00	0.00
		6	15.00	0.00
	TOTAL		**30.00**	**0.00**
160	**LOWER METTUR-IV HPS**	7	15.00	0.00
		8	15.00	0.00
	TOTAL		**30.00**	**0.00**
161	**METTUR DAM HPS**	1	12.50	1.60
		2	12.50	2.46
		3	12.50	1.15
		4	12.50	2.53
	TOTAL		**50.00**	**1.94**
162	**METTUR TUNNEL HPS**	1	50.00	38.07
		2	50.00	26.46
		3	50.00	39.09
		4	50.00	39.80

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
	TOTAL		**200.00**	**35.85**
163	**MOYAR HPS**	1	12.00	0.00
		2	12.00	0.00
		3	12.00	0.00
	TOTAL		**36.00**	**0.00**
164	**PAPANASAM HPS**	1	8.00	0.00
		2	8.00	0.00
		3	8.00	0.00
		4	8.00	0.00
	TOTAL		**32.00**	**0.00**
165	**PARSON`S VALLEY HPS**	1	30.00	0.00
	TOTAL		**30.00**	**0.00**
166	**PERIYAR HPS**	1	42.00	0.00
		2	42.00	0.00
		3	42.00	0.00
		4	35.00	0.00
	TOTAL		**161.00**	**0.00**
167	**PYKARA HPS**	1	7.00	0.00
		2	7.00	0.00
		3	7.00	0.00

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		4	13.60	0.00
		5	13.60	0.00
		6	11.00	0.00
	TOTAL		**59.20**	**0.00**
168	**PYKARA ULTMATE HPS**	1	50.00	0.00
		2	50.00	0.00
		3	50.00	0.00
	TOTAL		**150.00**	**0.00**
169	**SARKARPATHY HPS**	1	30.00	0.00
	TOTAL		**30.00**	**0.00**
170	**SHOLAYAR HPS (TN)**	1	35.00	0.00
		2	35.00	0.00
	TOTAL		**70.00**	**0.00**
171	**SURULIYAR HPS**	1	35.00	0.00
	TOTAL		**35.00**	**0.00**
	TSGENCO			
172	**LOWER JURALA HPS**	1	40.00	65.48
		2	40.00	25.75
		3	40.00	31.48
		4	40.00	30.68

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		5	40.00	31.23
		6	40.00	30.27
	TOTAL		**240.00**	**35.82**
173	**NAGARJUN SGR HPS**	1	110.00	7.66
		2	100.80	0.00
		3	100.80	11.89
		4	100.80	9.06
		5	100.80	9.59
		6	100.80	10.14
		7	100.80	9.84
		8	100.80	15.08
	TOTAL		**815.60**	**9.16**
174	**NAGARJUN SGR LBC HPS**	1	30.00	35.34
		2	30.00	34.52
	TOTAL		**60.00**	**34.93**
175	**POCHAMPAD HPS**	1	9.00	23.01
		2	9.00	14.52
		3	9.00	57.53
		4	9.00	26.85
	TOTAL		**36.00**	**30.48**

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
176	**PRIYADARSHNI JURALA HPS**	1	39.00	29.32
		2	39.00	30.14
		3	39.00	0.00
		4	39.00	33.14
		5	39.00	30.94
		6	39.00	0.82
	TOTAL		**234.00**	**20.72**
177	**PULICHINTALA HPS**	1	30.00	40.55
		2	30.00	35.07
		3	30.00	0.13
		4	30.00	34.79
	TOTAL		**120.00**	**27.64**
178	**SRISAILAM LB HPS**	1	150.00	33.42
		2	150.00	32.88
		3	150.00	32.88
		4	150.00	0.00
		5	150.00	30.14
		6	150.00	30.68
	TOTAL		**900.00**	**26.67**
	Eastern			

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
	APGENCO			
179	**MACHKUND HPS**	1	17.00	0.00
		2	17.00	0.00
		3	17.00	0.00
		4	21.25	0.00
		5	21.25	0.00
		6	21.25	0.00
	TOTAL		**114.75**	**0.00**
	DEPL			
180	**JORETHANG LOOP**	1	48.00	1.30
		2	48.00	1.28
	TOTAL		**96.00**	**1.29**
	DVC			
181	**MAITHON HPS**	1	20.00	57.24
		2	23.20	34.33
		3	20.00	55.11
	TOTAL		**63.20**	**48.89**
182	**PANCHET HPS**	1	40.00	0.00
		2	40.00	14.11
	TOTAL		**80.00**	**7.06**

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
	GIPL			
183	**CHUZACHEN HPS**	1	55.00	49.15
		2	55.00	45.41
	TOTAL		**110.00**	**47.28**
	JUUNL			
184	**SUBERNREKHA-I HPS**	1	65.00	0.00
	TOTAL		**65.00**	**0.00**
185	**SUBERNREKHA-II HPS**	2	65.00	0.00
	TOTAL		**65.00**	**0.00**
	MBPC			
186	**RONGNICHU HPS**	1	56.50	42.97
		2	56.50	44.33
	TOTAL		**113.00**	**43.65**
	NHPC			
187	**RANGIT HPS**	1	20.00	26.27
		2	20.00	19.09
		3	20.00	25.09
	TOTAL		**60.00**	**23.49**
188	**TEESTA LOW DAM-III HPS**	1	33.00	241.82
		2	33.00	130.81

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		3	33.00	243.44
		4	33.00	123.63
	TOTAL		**132.00**	**184.93**
189	**TEESTA LOW DAM-IV HPS**	1	40.00	144.32
		2	40.00	137.00
		3	40.00	40.18
		4	40.00	42.03
	TOTAL		**160.00**	**90.89**
190	**TEESTA V HPS**	1	170.00	100.00
		2	170.00	100.00
		3	170.00	100.00
	TOTAL		**510.00**	**100.00**
	OHPC			
191	**BALIMELA HPS**	1	60.00	0.00
		2	60.00	0.00
		3	60.00	0.00
		4	60.00	0.00
		5	60.00	0.00
		6	60.00	0.00
		7	75.00	0.00

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		8	75.00	0.00
	TOTAL		**510.00**	**0.00**
192	**CHIPLIMA HPS**	1	24.00	0.00
		2	24.00	0.00
		3	24.00	0.00
	TOTAL		**72.00**	**0.00**
193	**HIRAKUD HPS**	1	49.50	0.00
		2	49.50	0.00
		3	32.00	0.00
		4	32.00	0.00
		5	43.65	0.00
		6	43.65	0.00
		7	37.50	0.00
	TOTAL		**287.80**	**0.00**
194	**RENGALI HPS**	1	50.00	0.00
		2	50.00	0.00
		3	50.00	0.00
		4	50.00	0.00
		5	50.00	0.00
	TOTAL		**250.00**	**0.00**

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
195	**UPPER INDRAVATI HPS**	1	150.00	0.00
		2	150.00	0.00
		3	150.00	0.00
		4	150.00	0.00
	TOTAL		**600.00**	**0.00**
196	**UPPER KOLAB HPS**	1	80.00	0.00
		2	80.00	0.00
		3	80.00	0.00
		4	80.00	0.00
	TOTAL		**320.00**	**0.00**
	SEPL			
197	**TASHIDING HPS**	1	48.50	0.00
		2	48.50	0.00
	TOTAL		**97.00**	**0.00**
	SKPPPL			
198	**DIKCHU HPS**	1	48.00	0.00
		2	48.00	0.00
	TOTAL		**96.00**	**0.00**
	TUL			
199	**TEESTA-III HPS**	1	200.00	0.00

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		2	200.00	0.00
		3	200.00	0.00
		4	200.00	0.00
		5	200.00	0.00
		6	200.00	0.00
	TOTAL		**1200.00**	**0.00**
	WBSEDCL			
200	**JALDHAKA HPS ST-I**	1	9.00	0.00
		2	9.00	0.00
		3	9.00	0.00
		4	9.00	0.00
	TOTAL		**36.00**	**0.00**
201	**PURULIA PSS HPS**	1	225.00	0.00
		2	225.00	0.00
		3	225.00	0.00
		4	225.00	0.00
	TOTAL		**900.00**	**0.00**
202	**RAMMAM HPS**	1	12.50	36.07
		2	12.50	9.04
		3	12.50	26.83

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		4	12.50	17.57
	TOTAL		**50.00**	**22.38**
	North Eastern			
	APGCL			
203	**KARBI LANGPI HPS**	1	50.00	13.09
		2	50.00	10.29
	TOTAL		**100.00**	**11.69**
	MeECL			
204	**KYRDEMKULAI HPS**	1	30.00	3.67
		2	30.00	3.44
	TOTAL		**60.00**	**3.55**
205	**MYNTDU(LESHKA) St-1 HPS**	1	42.00	14.47
		2	42.00	3.78
		3	42.00	4.86
	TOTAL		**126.00**	**7.70**
206	**NEW UMTRU HPS**	1	20.00	0.46
		2	20.00	2.30
	TOTAL		**40.00**	**1.38**
207	**UMIAM HPS ST-I**	1	9.00	0.47
		2	9.00	1.31

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		3	9.00	4.95
		4	9.00	8.42
	TOTAL		**36.00**	**3.79**
208	**UMIAM HPS ST-IV**	7	30.00	0.37
		8	30.00	1.42
	TOTAL		**60.00**	**0.89**
	NEEPCO.			
209	**DOYANG HPS**	1	25.00	10.43
		2	25.00	12.40
		3	25.00	7.96
	TOTAL		**75.00**	**10.26**
210	**KAMENG HPS**	1	150.00	0.00
		2	150.00	0.00
		3	150.00	0.01
		4	150.00	0.00
	TOTAL		**600.00**	**0.00**
211	**KHONDONG HPS**	1	25.00	0.00
		2	25.00	0.00
	TOTAL		**50.00**	**0.00**
212	**KOPILI HPS**	1	50.00	0.00

SL.No.	UTILITY/STATION	UNIT No.	INSTALLED CAPAPCITY (MW)	MISCELLANEOUS NON-AVAILABILITY (%)
		2	50.00	0.00
		3	50.00	0.00
		4	50.00	0.00
	TOTAL		**200.00**	**0.00**
213	**PARE**	1	55.00	6.34
		2	55.00	6.06
	TOTAL		**110.00**	**6.20**
214	**RANGANADI HPS**	1	135.00	1.37
		2	135.00	1.37
		3	135.00	1.10
	TOTAL		**405.00**	**1.28**
215	**TUIRIAL HPS**	1	30.00	2.83
		2	30.00	1.50
	TOTAL		**60.00**	**2.16**
	NHPC			
216	**LOKTAK HPS**	1	35.00	14.46
		2	35.00	23.37
		3	35.00	19.93
	TOTAL		**105.00**	**19.26**

CHAPTER-8

GENERATION PROGRAMME FOR THE YEAR 2025-26

CHAPTER 8

GENERATION PROGRAMME FOR THE YEAR 2025-26

8.1 As on 31.03.2025, 216 HE Stations (of more than 25 MW capacity) having total installed capacity of 47728.17 MW are being monitored in the country. With the addition of new hydro units during 2025-26, the anticipated installed capacity of H.E. Stations in the country is likely to be 52944.17 MW by 31st March, 2026. The overall Generation Programme for H.E. stations for the year 2025-26 has been fixed at 165146 MU comprising 155674 MU from HE Stations in India and 9472 MU import from Bhutan, which is 11027.84 MU more than actual generation during 2024-25 (i.e. 154118.16 MU comprising 148633.98 MU from HE Stations in India and 5484.18 MU import from Bhutan).

8.2 Region-wise summary of likely installed capacity as on 31.03.2025, Generation targets for 2025-26 and the hydro generation during 2024-25 are given in **Table 8.1** below:

TABLE 8.1

REGION-WISE LIKELY INSTALLED CAPACITY OF HE STATIONS AND HYDRO GENERATION PROGRAMME DURING 2025-26

Sl. No.	Region	Likely Hydro Installed Capacity (as on 31.03.2026) (MW)	Hydro Generation Programme for 2025-26 (MU)	Hydro Generation during 2024-25 (MU)	
				Target	Actual
1.	Northern	22390.27	81323	80886.00	76489.47
2.	Western	7272.00	16894	16573.00	19689.91
3.	Southern	16061.70	40476	30878.00	33966.57
4.	Eastern	3493.20	6024	20178.00	11216.85
5.	North-Eastern	3277.00	10957	7152.00	7271.18
Sub total		**52944.17**	**155674.00**	**147709**	**148633.98**
6.	Import – from Bhutan		9472	8000	5484.18
Total (Including Import from Bhutan)			**165146.00**	**155709.00**	**154118.16**

8.3 Sector-wise and Utility-wise details of likely installed Capacity as on 31.03.2026, targets and actual generation during 2024-25, generation target for 2025-26 are given in **Annex-8.2**.

Annex-8.2

SECTOR-WISE PERFORMANCE OF HYDROELECTRIC STATIONS DURING 2024-2025 & TARGETS FOR 2025-2026

SECTOR/ UTILITY	Likely Hydro Installed Capacity as on 31.03.2026	Generation during 2024-2025 (MU)		Generation Target for 2025-26 (MU)
		Target	Actual	
A. CENTRAL SECTOR				
BBMB	2956.3	9650	10748.49	9600
NHPC Ltd	7621.2	25401	19730.33	28786
SJVN Ltd	1972.02	9145	9810.33	9227
NTPC Ltd	800	3100	3353.15	3100
THDC Ltd	2400	5269	4618.58	5220
NHDC Ltd.	1520	3265	5463.61	4192
DVC	143.2	286	273.39	217
NEEPCO Ltd.	1500	5247	5248.73	5775
Sub Total	**18912.72**	**61363**	**59246.61**	**66137**
B. STATE ELECTRICITY BOARDS/CORPORATIONS				
JKSPDCL	1110	5073	4841.82	4767
HPPCL	406	890.00	918.10	958
HPSEBL	372	1653	1369.40	2123
RRVUNL	411	662	905.80	675
PSPCL	1257	3640	3461.67	3560
UPJVNL	501.6	1215	1273.74	1198
UJVNL	1372.15	5069	4952.24	4932
SSNNL	1450	3955	4862.09	3853
GSECL	540	1051	1166.43	1051
MAHAGENCO	2406.00	4051	3599.22	3897
MPPGCL	875.00	2461	2585.67	2385
CSPGCL	120.00	274	419.42	335
APGENCO	2026.75	3557	3984.17	3586
TSGENCO	2405.60	3686	5270.78	3907
KPCL	3617.20	11537	13855.99	12852
KSEBL	1964.15	7519	6733.99	7612
TANGEDCO	2678.20	4329	4602.72	4721
JUUNL	130.00	110	151.59	110
OHPC	2039.80	5684	5804.28	5456
TUL	1200	0	0.00	0.00
WBSEDCL	986	1600	1735.34	1575
APGCL	220	380	410.50	425
MePGCL	322	1107	905.58	1096

SECTOR/ UTILITY	Likely Hydro Installed Capacity as on 31.03.2026	Generation during 2024-2025 (MU)		Generation Target for 2025-26 (MU)
		Target	Actual	
BVPCL	100.00	40	20.63	40.0
Sub Total	**28510.45**	**69543.00**	**73831.17**	**71074.00**
C. PRIVATE SECTOR				
MPCL	86.00	333	243.85	330
EPPL	100.00	340	184.00	348
ADHPL	192.00	660.00	656.72	650
GBHPPL	70.00	274	282.62	270
HBPCL	300.00	1213.00	1365.61	4902
JSW ENERGY	1285.00	4131.00	4537.06	1300
IAEPL	36.00	158.00	158.42	158
AHPC LTD	330.00	1310	1452.16	1281
JPVL	400.00	1750	1828.43	1670
DLHP	34.00	36	32.35	36
GIPL	110.00	537	395.86	490
TPCL	447.00	1480.00	1561.12	1480
DEPL	96.00	425	410.85	415
SEPL	97.00	435	454.71	435
SNEHA KINETIC	96.00	495	35.26	495
NTPGPL	0.00	300	0.00	0
HSPPL	100.00	402	388.26	378
L&T/ ReNew Power Private Limited	99.00	410	442	420
GMR	180.00	769	732	763
MBPC	113.00	465	395	410
GREENKO	1200.00	880	0.00	2232
STATCRAFT	150.00	0	0	0
Sub Total	**5521.00**	**16803.00**	**15556.00**	**18463.00**
Total All India	**52944.17**	**147709.00**	**148633.98**	**155674.00**
Import from Bhutan		**8000**	**5476.57**	**9472**
Total Hydro generation including import from Bhutan		**155709.00**	**154118.16**	**165146.00**

CHAPTER-9

RENOVATION & MODERNISATION OF HYDRO-ELECTRIC STATIONS

CHAPTER – 9

9. RENOVATION & MODERNISATION OF HYDRO ELECTRIC POWER PROJECTS

9.1 R&M Phase-I Programme

Recognising the benefits of the R&M programme, Govt. of India set up a National Committee in 1987 to formulate strategy on R&M of hydro power projects. Based on the recommendations of the National Committee and subsequent reviews, a programme for Renovation, Modernization and Uprating of Hydro Power Stations was formulated by Central Electricity Authority in which 55 schemes were identified with an aggregate capacity of 9653 MW. The total cost of these schemes were estimated as Rs.1493 Crores with expected benefit of 2531 MW.

9.2 R&M Phase-II Programme

As per the hydro policy of Govt. of India declared in 1998, Renovation & Modernization of Hydro Power Plants was accorded priority. Accordingly, 67 hydro R&M schemes having an aggregate capacity of 10318 MW were identified to be undertaken under Phase-II programme till the end of X Plan to accrue a benefit of 3685 MW at an estimated cost of Rs. 2161 Crores.

9.3 National Perspective Plan

CEA formulated the National Perspective Plan for hydro power stations in the year 2000 and incorporated R&M proposals under Phase-II programme alongwith the left out schemes as recommended in Phase-I programme of National Committee. The left out schemes were those which were either under implementation or were yet to be implemented. This Perspective Plan was for IX, X and XI Plan with 117 schemes having an aggregate installed capacity of 19370 MW with benefit of 7755MW at an estimated cost of Rs.4654 Crores.

9.4 Achievements during VIII, IX, X, XI, XII Plan and Period 2017-22

The R&M works at 118 (26 in Central and 92 in State Sector) hydro power plants (13 up to the VIII Plan, 20 in the IX Plan, 32 in the X Plan, 18 in the XI Plan, 21 in the XII Plan & 14 during 2017-22) with an aggregate installed capacity of 22634.7 MW had been completed by the end of the year 2017-22 and total a benefit of 4139.56 MW through Life Extension (LE), Uprating (U) and Restoration had been accrued. The State-wise list of Hydro RM&U Schemes completed during VIII, IX, X, XI XII Plans and 2017-22 are given at Annex-I, II, III, IV ,V and VI respectively.

9.5 Programme during the period 2022-27

The Renovation, Modernization, Uprating and Life Extension works at 49 Hydro Electric Plants (HEPs) with an aggregate installed capacity of 8765.90 MW is programmed for completion during the year 2022-27 with its break-up as 2228.8 MW through R&M at 14 HEPs, 5294.1 MW through Life Extension at 26 HEPs and 1243 MW through Life Extension and Uprating at 09 HEPs. The 09 HEPs where both Life Extension & Uprating are envisaged, the aggregate installed capacity of 1243 MW shall get uprated after completion of R&M works to 1400.5 MW resulting in additional benefit of installed capacity of 157.5 MW. As such, the revised aggregate installed capacity after completion of RMU&LE works of these 49 projects would be 8923.40 MW. The State-wise list of hydro R&M schemes expected for completion during the year 2022-27 is given at Annex-VII.

9.6 Programme during the period 2027-32

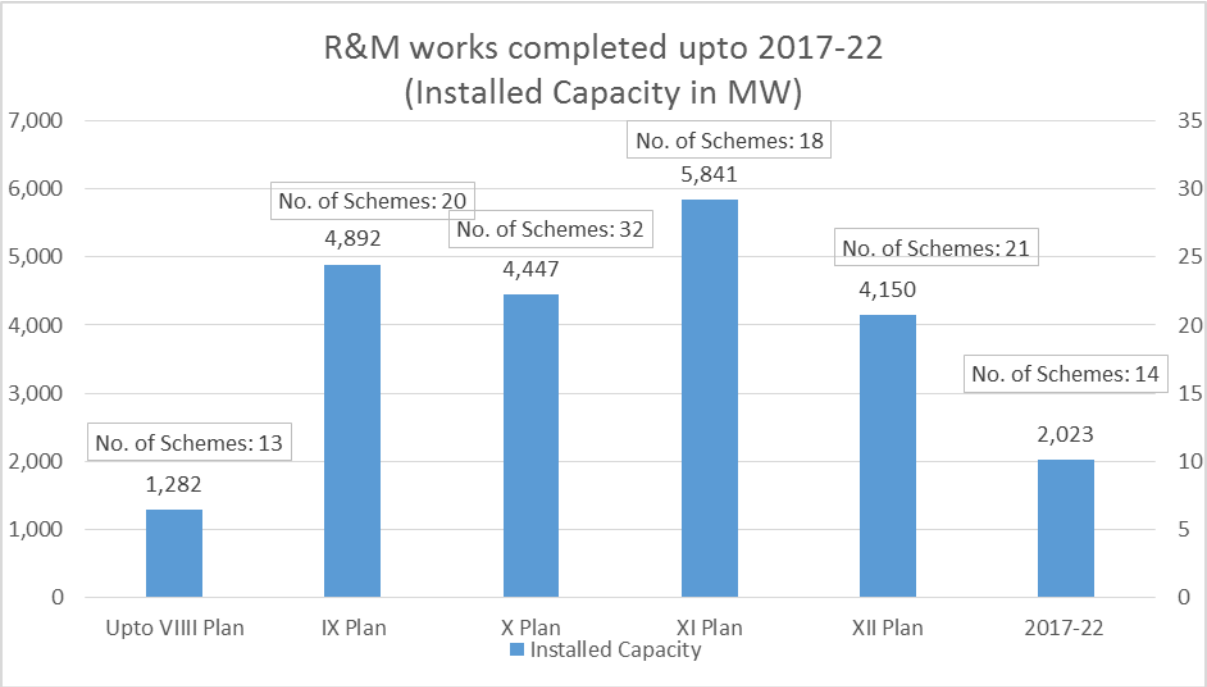
The Renovation, Modernization, Uprating and Life Extension works at 32 Hydro Electric Plants (HEPs) with an aggregate installed capacity of 5161.20 MW is programmed for completion during 2027-32 through Life Extension and Uprating. The State-wise list of hydro R&M schemes expected for completion during 2027-32 is given at Annex-VIII.

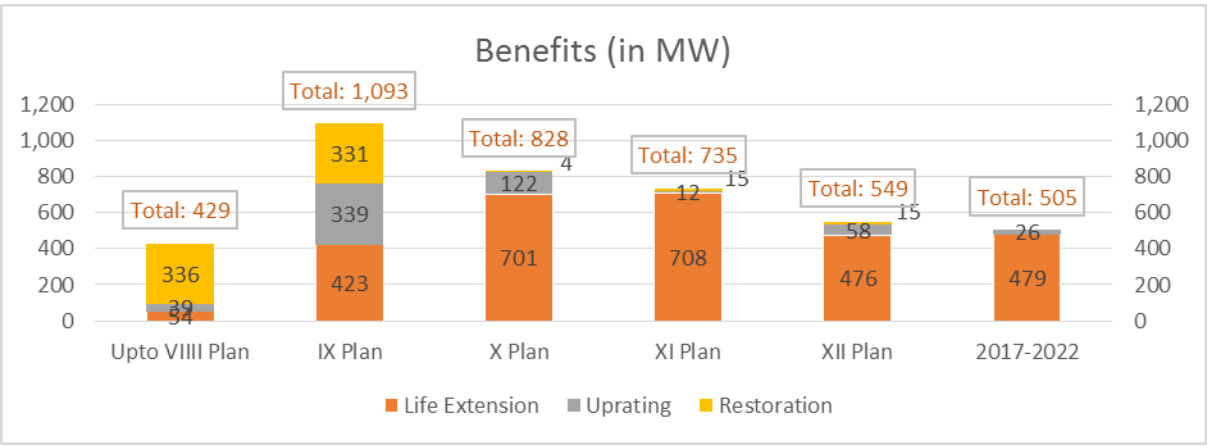
Plan-wise summary of R&M of H.E. Projects starting from VIII Plan is given below:

9.7 Summary of R&M of Hydro Electric Projects (As on 31.03.2025)

I Hydro R&M schemes completed up to 2017-22

Sl. No.	Plan Period	No. of Projects			Installed Capacity (MW)	Actual Expenditure (Rs. in Crs)	Benefit (MW)
		Central Sector	State Sector	Total			
1.	Upto VIII Plan Schemes	2	11	13	1282.00	127.37	429.00 [39.00(U) + 54.00LE+ 336.00(Res.)]
2.	IX Plan Schemes	8	12	20	4892.10	570.16	1093.03 [339.00(U)+ 423.00(LE) + 331.03(Res.)]
3.	X Plan Schemes	5	27	32	4446.60	1029.24	827.73 [122.05(U) + 701.25 (LE) + 4.43(Res.)]
4.	XI Plan Schemes	4	14	18	5841.20	294.84	735 [12 (U) + 708 (LE) + 15 (Res.)]
5.	XII Plan Schemes	2	19	21	4149.60	1146.02	549.40 [58 (U)+ 476.40 (LE)+15(Res.)]
6.	2017-2022	5	9	14	2023.2	848.68	505.4 [479.2(LE) + 26.2(U)]
	Total	26	92	118	22634.7	4016.31	4139.56 [596.25 (U)+ 2841.85 (LE)+ 701.46 (Res.)]





II Programme & Completion of R&M works during 2022-27

Sl. No.	Category	No. of Projects			Capacity covered under RMU&LE (MW)	Benefit (MW)
		Central Sector	State Sector	Total		
1.	Programmed	6	43	49	8765.90	6694.6 [6537.10(LE)+ 157.5(U)]
2.	Completed	2	9	11	2500.8	1391 [1301 (LE)+ 90(U)]
3.	Under Implementation	3	17	20	3140.75	2477.25 [2441.75(LE)+ 35.5(U)]
4.	Under Tendering	1	2	3	312	218 [212(LE)+06(U)]
5.	Under DPR Preparation/ Finalisation/ Approval	0	4	4	955	961 [955(LE)+ 6(U)]
6.	Under RLA Studies	0	11	11	1857.35	1647.35 [1627.35(LE)+ 20(U)]

III Programme of R&M works during 2027-32

Sl. No.	Category	No. of Projects			Capacity covered under RMU&LE (MW)	Benefit (MW)
		Central Sector	State Sector	Total		
1.	Programmed	5	27	32	5161.2	5267.03 [5161.20(LE)+ 105.83(U)]
2.	Under Implementation	0	1	1	144	156 [144(LE)+12(U)]
3.	Under Tendering	1	2	3	751	835.83 [751(LE)+ 84.83(U)]
4.	Under DPR Preparation/Finalisation/ Approval	0	6	6	1058	1067 [1058(LE)+ 9(U)]
5.	Under RLA Studies	4	18	22	3208.20	3208.20 [3208.20(LE)+ 0(U)]

9.8 Achievement during the year 2024-25

R&M works of the following one (1) Scheme with an aggregate installed capacity of about 200 MW have been completed during the year 2024-25 which has resulted in benefit of 200 MW through Life Extension:

S. No.	Name of Scheme, Utility/Agency	Capacity under R&M (No. x MW)	Category	Cost (in Rs. Crores)	Benefit (MW)
1	Kopili Power Station, NEEPCO	4x50=200	RM&LE	1201.65	200.00(LE)+ 0.00 (U)

Abbreviations:

R&M – Renovation & Modernisation,
RM&U – Renovation Modernisation & Uprating, RM&LE – Renovation, Modernisation & Life Extension,
RMU&LE – Renovation, Modernisation, Uprating & Life Extension,
Res. – Restoration
RLA- Residual Life Assessment

9.9 Programme for the year 2025-26

For the year 2025-26, it is programmed to complete following 15 schemes having an installed capacity of 2488 MW, which will result in benefit of extension of operational life for installed capacity of 2028 MW and also increase in installed capacity by 29.5 MW.

S. No.	Name of Scheme, Utility/Agency	Capacity under R&M (No. MW)	Category	Estimate Cost (in Rs. Crores)	Benefit (MW)
1	Obra, UPJVNL	3x33	RM&LE	58.80	99 (LE)
2	Shivasamudram, KPCL	6x3+4x6	RM&LE	169.18	42 (LE)

3	Nagjhari U-1 to U-3,KPCL	3x150	RM&LE	266	450(LE)
4	Sharavathy Generating Station, KPCL	10x103.5	RM&LE	196.56	1035(LE)
5	Kadra Dam Power House, KPCL	3x50	R&M	44.67	-
6	Kodasalli Dam Power House, KPCL	3x40	R&M	50.60	-
7	Moyar PH, TNPGCL	3x12	RMU&LE	121.127	36 (LE)+ 6(U)
8	Kodayar PH-I TNPGCL	1x60	RMU&LE	80.96	60(LE)+ 10(U)
9	Kuttiyadi, KSEB	3x25	RMU&LE	377.41	75(LE)+ 7.5(U)
10	Nagarjunasagar Right Canal Power House, APGENCO	3x30	R&M	10.1	-
11	Khandong Power Station, NEEPCO	2x23	RM&LE	277.74	46 (LE)
12	Loktak, NHPC	3x35	RM&LE	273.59	105(LE)
13	Maithon (U1&3), DVC	2x20+1x23.2	RM&LE	109.29	40(LE)
14	Panchet U-1, DVC	2x40	RMU&LE	121.85	40(LE)+ 6(U)
15	Supa Dam Power House, KPCL	2x50	R&M	47.91	-

Annex- 9.1

State-wise List of Hydro RMU&LE schemes completed upto the VIII Plan

Sl. No.	Project, Agency	CS/ SS	Inst. Cap. (MW)	Est. Cost (Rs. in Crs.)	Actual Exp. (Rs. in Crs.)	Benefits (MW)	Category	Year of Completion
Himachal Pradesh								
1	Bairasiul, NHPC	CS	3x60	25.98	25.98	18 (U)	RM&U	1991-92
2	Giri, HPSEB	SS	2x30	9.85	7.90	6 (U)	RM&U	1995-96
Punjab								
3	UBDC-I, PSPCL	SS	3x15	11.00	8.00	11 (Res)	R&M+Res.	1991-92
Uttar Pradesh								
4	Rihand, UPJVNL	SS	6x50	1.43	1.43	100(Res.)	R&M+Res.	1995-96
Karnataka								
5	Nagjhari, U-2, KPCL	SS	1x135	11.97	11.32	15 (U)	RM&U	1995-96
6	Shivasamudram, VVNL	SS	6x3 + 4x6	8.00	8.00	18 (LE)	RM&LE	N.A.
Kerala								
7	Sholayar, KSEB	SS	3x18	7.58	7.58	-	R&M	1996-97
Tamil Nadu								
8	Kadamparai (Units 3&4), TANGEDCO	SS	2x100	23.17	33.69	200(Res.)	R&M+Res.	1993-95
9	Kundah III (Units 1&2), TANGEDCO	SS	2x60	5.45	3.20	-	R&M	1991-92
10	Moyar, TANGEDCO	SS	3x12	1.62	1.30	36.00 (LE)	RM&LE	1990-91
11	Sholayar-I, TANGEDCO	SS	2x35	1.40	0.85	-	R&M	1994-95
Assam								
12	Khandong, U-1, NEEPCO	CS	1x25	0.62	0.62	25 (Res)	R&M+Res.	1991-92
Tripura								
13	Gumti, TPGL	SS	3x5	17.50	17.50	-	R&M	1994-95
Total			**1282**	**125.57**	**127.37**	**429 [39 (U) + 54(LE) + 336(Res)]**		

Abbreviations: R&M – Renovation & Modernisation;. U – Uprating; LE – Life Extension; Res – Restoration; MW – Mega Watt; CS-Central Sector: SS- State Sector

State-wise List of Hydro RMU&LE schemes completed in the IX Plan

Sl. No.	Project, Agency	CS/ SS	Inst. Cap. (MW)	Est. Cost (Rs. in Crs.)	Actual Exp. (Rs. in Crs.)	Benefits (MW)	Category	Year of Completion
Himachal Pradesh								
1	Bhakra RB BBMB	CS	5x132	88.45	90.68	125.00 (U)	RM&U	2000-01
2	Dehar U-2 BBMB	CS	1x165	10.74	10.74	25.00 (Res.)	R&M+Res.	1998-99
3	Bairasiul, NHPC	CS	3x66	18.45	18.45	-	R&M	2000-01
4	Bassi, HPSEB	SS	4x15	5.35	4.34	-	R&M	2000-01
Jammu & Kashmir								
5	Salal St.I, NHPC	CS	3x115	51.50	51.50	-	R&M	2000-01
6	Chenani, J&KSPDC	SS	5x4.66	11.00	11.00	0.93 (Res)	R&M+Res.	2000-01
Punjab								
7	Ganguwal, U-2 BBMB	CS	1x24.2	18.90	15.00	22.00 (LE)+ 2.20 (Res)	RM&LE+Res	1997-98
8	Kotla, U-3, BBMB	CS	1x24.2	18.90	16.90	22.00 (LE)+ 2.20 (Res)	RM&LE+Res	1998-99
9	Ganguwal U-3, BBMB	CS	1x24.2	25.00	43.40	22.00 (LE)+ 2.20 (Res)	RM&LE+Res	2000-01
10	Kotla U-2, BBMB	CS	1x24.2	25.00		22.00 (LE)+ 2.20 (Res)	RM&LE+Res	2001-02
Uttarakhand								
11	Chilla U-1, 3& 4, UJVNL	SS	3x36	4.25	4.11	-	R&M	1998-99
12	Tiloth, UJVNL	SS	3x30	8.02	5.51	6.00 (U)	RM&U	1998-99
Andhra Pradesh								
13	Lower Sileru, APGENCO	SS	4x115	13.35	9.30	24.00 (Res)	R&M+Res.	2001-02
14	Srisailam RB, APGENCO	SS	7x110	16.32	11.40	-	R&M	2001-02
Karnataka								
15	Sharavathy, U-1 to 8, KPCL	SS	8x89.1	65.00	63.49	115.20 (U) +178.20 (Res)	RM&U+Res	1997-98
16	Sharavathy, U-9&10, KPCL	SS	2x89.1	17.96	14.68	28.80(U) +19.10 (Res)	RM&U+Res	1997-98

Sl. No	Project, Agency	CS/ SS	Inst. Cap. (MW)	Est. Cost (Rs. in Crs.)	Actual Exp. (Rs. in Crs.)	Benefits (MW)	Category	Year of Completion
Orissa								
17	Hirakud-I, U1&2, OHPC	SS	2x37.5	95.10	95.10	24.00(U) +75.00(LE)	RMU&LE	1997-98
Gujarat								
18	Ukai,U-1&3, GSECL	SS	2x75	24.99	24.99	75.00 (Res.)	R&M+Res.	1997-98
Maharashtra								
19	Koyna I&II, MSPGCL	SS	4x65+ 4x75	74.91	74.91	40.00(U) + 260.00(LE)	RM&U of St-I & II & LE of St-I	1999-2000
20	Koyna III, U-10, 11 &12, MSPGCL	SS	3x80	4.65	4.65	-	R&M	1997-98
Total			**4892.10**	**597.84**	**570.16**	**1093.03 [339.0(U) + 423.0(LE) + 331.03(Res.)]**		

Abbreviations: R&M – Renovation & Modernisation;. U – Uprating; LE – Life Extension;
Res – Restoration; MW – Mega Watt; CS-Central Sector: SS- State Sector

Annex- 9.3
(Sheet 1/ 3)

State-wise List of Hydro RMU&LE schemes completed in the X Plan

Sl. No.	Project, Agency	CS/ SS	Inst. Cap. (MW)	Est. Cost (Rs. in Crs.)	Actual Exp. (Rs. in Crs.)	Benefits (MW)	Category	Year of Completion
Himachal Pradesh								
1	Pong, BBMB	CS	6x60	17.70	17.79	36.00(U)	RM&U	2003-04
Punjab								
2	Ganguwal,U-1, BBMB	CS	1x29.25	51.28	81.99	25.89 (LE) +2.10	RM&LE+Res.	2006-07
2	Kotla, U-1, BBMB	CS	1x29.25	51.28		2.33 (Res.)	RM&LE+Res.	2006-07
4	Shanan Ph.A, PSPCL	SS	4x15+ 1x50	11.35	10.93	-	R&M	2003-04
5	Shanan, Ph.B, PSPCL	SS	4x15+ 1x50 $	35.95	13.34	60.00(LE)	RM&LE(LE for 15 MW units+R&M for 50 MW unit	2006-07
6	Anandpur Sahib, PSPCL	SS	4x33.5	3.68	1.04	-	R&M	2006-07
7	UBDC I&II, PSPCL	SS	3x15+ 3x15.45	7.89	2.44	45.00 (LE)	RM&LE(LE for 3x15MW&R &M for 3x15.45 MW	2006-07
8	Mukerian St.I, PSPCL	SS	3x15	6.04	4.38	-	R&M	2006-07
Uttarakhand								
9	Chibro, UJVNL	SS	4x60	10.45	10.52	-	R&M	2006-07
Karnataka								
10	Nagjhari, U-1&3,KPCL	SS	2x135	26.12	21.62	30 (U)	RM&U	2002-03
11	Supa PH, KPCL	SS	2x50	2.64	2.47	-	R&M	2002-03
12	Mahatma Gandhi, VVNL	SS	4x12+ 4x18	44.66	43.13	19.20 (U) +120.00 (LE)	RMU&LE	2002-03
13	Munirabad, VVNL	SS	2x9+ 1x10.3	3.64	3.53	28.30 (LE)	RM&LE	2002-03

Annex- III
(Sheet 2/3)

Sl. No	Project, Agency	CS/ SS	Inst. Cap. (MW)	Est. Cost	Actual Exp	Benefits (MW)	Category	Year of Completion
				(Rs. in Crs.)				
14	Mani Dam, KPCL	SS	2x4.5	1.00	1.00	-	R&M	2002-03
15	Shivasamudram, VVNL	SS	6x3+ 4x6	68.38	73.17	42.00 (LE)	RM&LE	2004-05
16	Bhadra, Ph.II, KPCL	SS	1x2	3.30	2.51	2.00 (LE)	RM&LE	2005-06
17	Varahi, KPCL	SS	2x115	2.57	2.66	-	R&M	2006-07
18	Sharavathy, Ph.A, KPCL	SS	10x103.5	5.22	3.52	-	R&M	2006-07
Kerala								
19	Neriamanga-lam KSEB	SS	3x15	58.00	53.05	7.65 (U) +45.00(LE)	RMU&LE	2006-07
20	Pallivasal, KSEB	SS	3x5+ 3x7.5	94.00	371.71	37.50 (LE)	RM&LE	2002-03
21	Sengulam, KSEB	SS	4x12	114.00		48.00 (LE)	RM&LE	2002-03
22	Panniar, KSEB	SS	2x15	62.00		30.00 (LE)	RM&LE	2002-03
Tamilnadu								
23	Pykara, TANGEDCO	SS	3x6.65+ 1x11+2x	26.06	20.147	58.95(LE)	RM&LE	2004-05
24	Papanasam, TANGEDCO	SS	4x7	27.05	22.61	4.00 (U) + 28.00 (LE)	RMU&LE	2005-06
Orissa								
25	Hirakud-I (Sw.yard), OHPC	SS		9.85	15.88	-	R&M	2006-07
26	Hirakud-I,U-3&4, OHPC	SS	2x24	126.14	108.86	16.00(U)+ 48.00(LE)	RMU&LE	2005-06
West Bengal								
27	Maithon, U-2, DVC	CS	1x20	42.08	36.94	3.20(U)+ 20.00(LE)	RMU&LE	2004-05
Maharastra								
28	Bhira Tail Race, MSPGCL	SS	2x40	1.60	0.70	-	R&M	2003-04
29	Tillari, MSPGCL	SS	1x60	4.50	4.24	6.0 (U)	RM&U	2004-05

Annex- III

(Sheet 3/3)

Sl. No	Project, Agency	CS/ SS	Inst. Cap. (MW)	Est. Cost (Rs. in Crs.)	Actual Exp (Rs. in Crs.)	Benefits (MW)	Category	Year of Completion
30	Koyna Gen. Complex, MSPGCL	SS	4x70+4x80+4x80	12.00	11.50	-	R&M	2004-05
Meghalaya								
31	Umium St.I, MePGCL	SS	4x9	81.88	84.21	36(LE)	RM&LE	2002-03
Assam								
32	Khandong, NEEPCO	CS	2x25	4.00	3.35	-	R&M	2003-04
Total			**4446.60**	**1016.31**	**1029.24**	**827.73 [122.05(U) +701.25(LE) + 4.43(Res.)]**		

$ - Installed Capacity of Shanan, Ph.B, at Sl. No. 5 not included in the total, as the same has been accounted for at Sl. No. 4.

Abbreviations: R&M – Renovation & Modernisation;. U – Uprating; LE – Life Extension; Res – Restoration; MW – Mega Watt; CS-Central Sector: SS- State Sector

Annex- 9.4
(Sheets 1 of 2)

State-wise List of Hydro RMU&LE schemes completed in the XI Plan

Sl. No	Project, Agency	CS/ SS	Inst. Cap. (MW)	Est. Cost (Rs . in crs)	Actual Exp (Rs . in crs)	Benefits (MW)	Category	Year of Completion
Himachal Pradesh								
1	Dehar Ph. A BBMB	CS	6x165	11.00	6.94	-	R&M	2010-11
2	Dehar Ph. B BBMB	CS	6x165	49.00	24.45	330(LE)	RM&LE	2009-10
Uttarakhand								
3	Tanakpur, NHPC	CS	3x31.4	10.77	11.95	-	R&M	2007-08
4	Khodri Ph.A, UJVNL	SS	4x30	5.25	6.39	-	R&M	2008-09
5	Chilla Ph.A, UJVNL	SS	4x36	23.55	21.24	-	R&M	2008-09
Andhra Pradesh								
6	Upper Sileru, APGENCO	SS	4x60	4.20	3.34	-	R&M	2009-10
Karnataka								
7	Nagjhari, U1 to 6, KPCL	SS	5x150 + 1x135	14.75	15.31	-	R&M	2009-10
8	Sharavathy Ph.B, KPCL	SS	10x103.5	20.50	11.14	-	R&M	2009-10
9	Supa, KPCL	SS	2x50	3.45	4.90	-	R&M	2009-10
10	Bhadra, KPCL	SS	2x12	1.44	0.85	-	R&M	2009-10
11	Lingnamakki, KPCL	SS	2x27.5	3.81	2.62	-	R&M	2010-11
Tamil Nadu								
12	Mettur Dam, TANGEDCO	SS	4x10	30.17	24.16	10 (U) + 40 (LE)	RMU&LE	2007-08
Maharashtra								
13	Koyna St.I&II, MSPGCL	SS	4x70 + 4x80	87.50	81.82	-	R&M	2008-09

Annex- IV

(Sheets 2 of 2)

Sl. No	Project, Agency	CS/ SS	Inst. Cap. (MW)	Est. Cost	Actual Exp	Benefits (MW)	Category	Year of Completion
				(Rs . in crs)				
14	Vaitarna, MSPGCL	SS	1x60	16.00	0.14	-	R&M	2009-10
15	Koyna Dam PH, MSPGCL	SS	2x18	5.78	0.25	-	R&M	2009-10
16	Koyna St.III, MSPGCL	SS	4x80	16.65	5.79	320 (LE)	RM&LE	2011-12
Manipur								
17	Loktak, NHPC	CS	3x30 derated	18.55	17.88	15.00 (Res.)	R&M + Res.	2011-12
Meghalaya								
18	Umium St.II, MePGCL	SS	2x9	90.46	55.67	2(U)+18.00(LE)	RMU&LE	2011-12
Total			**5841.2**	**412.83**	**294.84**	**735 [12.00(U) +708.00 (LE)+15.00 (Res)]**		

Abbreviations: R&M – Renovation & Modernisation;. U – Uprating; LE – Life Extension;
Res – Restoration; MW – Mega Watt; CS-Central Sector: SS- State Sector

State-wise list of Hydro RMU&LE schemes completed in the XII Plan

Sl. No	Project, Agency	CS/ SS	Inst. Cap. (No.x.MW)	Est. Cost (Rs . in Crs)	Actual Exp (Rs . in Crs)	Benefits (MW)	Capacity after RMU&LE (MW)	Category	Year of Completion
Himachal Pradesh									
1	Bassi, HPSEB	SS	4x15	124.25	158.26	6.0(U)+ 60(LE)	66	RMU&LE	2013-14
Jammu & Kashmir									
2	Lower Jhelum, J&KSPDC	SS	3x35	101.3	96.10	15.00(Res)	105	R&M+ Res.	2014-15
3	Sumbal Sindh, J&KSPDC	SS	2x11.3	25.00	24.59	-	22.6	R&M	2016-17
Uttarakhand									
4	Pathri, UJVNL	SS	3x6.8	113.25	108.3	20.40(LE)	20.4	RM&LE	2014-15
5	Khatima, UJVNL	SS	3x13.8	256.77	148.88	41.40 (LE)	41.4	RM&LE	2016-17
Uttar Pradesh									
6	Matatila, UPJVNL	SS	3x10.2	10.29	7.21	30.6 (LE)	30.6	RM&LE	2015-16
Andhra Pradesh									
7	Lower Sileru, APGENCO	SS	4x115	8.75	6.77	-	460	R&M	2013-14
8	Srisailam RB, APGENCO	SS	7x110	16.70	17.60	-	770	R&M	2015-16
Telangana									
9	Nagarjuna Sagar Ph-I works, TSGENCO	SS	1x110+ 7x100.8	33.35	13.90	-	815.6	R&M	2012-13
Karnataka									
10	Supa, KPCL	SS	2x50	3.45	3.88	-	100	R&M	2014-15
11	Nagjhari,U-1 to 6, KPCL	SS	1x135 (U-6)	69.21	64.49	15 (U)	150	RM&U	2015-16
12	Sharavathy Genarating Station (Ph B), KPCL	SS	10x103.5	20.00	29.27	-	1035	R&M	2016-17
Kerala									
13	Idamalayar, KSEB	SS	2x37.5	14.50	13.22	-	75	R&M	2012-13

Annex- V

(Sheet 2 of 2)

Sl. No	Project, Agency	CS/ SS	Inst. Cap. (No.x.MW)	Est. Cost	Actual Exp	Benefits (MW)	Capacity after RMU&LE	Category	Year of Completion
				(Rs . in Crs)					
14	Sabarigiri, U-4 KSEB	SS	1x55	52.20	50.41	5(U)	60	RM&U	2014-15
15	Poringalkuthu, KSEB	SS	4x8	88.63	51.90	4 (U)+ 32.00 (LE)	36	RMU&LE	2015-16
Tamil Nadu									
16	Periyar, TANGEDCO	SS	4x35	161.18	133.68	28.00(U)+ 140(LE)	168	RMU&LE	2015-16
Odisha									
17	Rengali Unit-1 OHPC	SS	1x50	47.50	36.76	50(LE)	50	RM&LE	2012-13
18	Rengali Unit-2 OHPC	SS	1x50	25.20	20.73	50(LE)	50	RM&LE	2013-14
West Bengal									
19	Jaldhaka St.I, WBSEDCL	SS	3x9	88.62	79.97	27 (LE)	27	RM&LE	2016-17
Assam									
20	Khandong, NEEPCO	CS	1x25	25.05	29.18	25(LE)	25	RM&LE	2014-15
21	Kopili, NEEPCO	CS	2x50	50.22	50.92	-	100	R&M	2014-15
Total			**4149.60**	**1335.42**	**1146.02**	**549.40 [58(U)+ 476.40 (LE) + 15 (Res)]**	**4207.6**		

State-wise list of Hydro RMU&LE schemes completed during 2017-22

Sl. No	Name of Project, Agency, Inst. Cap. (No. x MW)	CS/ SS	Capacity Covered Under RMU&LE (No.x MW)	Est. Cost (Rs. in Crs.)	Actual Exp. (Rs. in Crs.)	Benefits (MW)	Capacity after RMU&LE (MW)	Category	Year of Completion
A. COMPLETED SCHEMES IN 2017-22									
Jammu & Kashmir (UT)									
1	Salal, NHPC (6x115)	CS	5x115	58.01	51.08	-	575	R&M	Completed in 2019-20
2	Chenani, J&KSPDC (5x4.66)	SS	5x4.66	34.28	21.84	23.30 (LE)	23.3	RM&LE	Completed in 2021-22
3	Ganderbal, (Unit-3) J&KSPDC (2x3+2x4.5)	SS	1x4.5	18.00	3.26	4.5 (LE)	4.5	RM&LE	Completed in 2021-22
Punjab									
4	Ganguwal, BBMB (1x29.25+2x24.2) & Kotla, BBMB (1x29.25+2x24.2)	CS	1x24.2 (U-2) 1x24.2 (U-3)	14.19	9.58	48.4 (LE)	48.4	RM&LE	Completed in 2017-18
Himachal Pradesh									
5	Dehar Power House (Unit-6), BBMB (6x165)	CS	1x165	19.87	16.00	-	165	R&M	Completed in 2017-18
6	Dehar Power House (Unit-3), BBMB (6x165)	CS	1x165	23.00	18.67	-	165	R&M	Completed in 2021-22
7	Baira Siul, NHPC (3x60)	CS	3x60	341.41	330	180 (LE)	180	RM&LE	Completed in 2021-22
Gujarat									
8	Ukai, GSECL (4x75)	SS	3x75 (U-1,2,&4)	7.30	7.30	-	225	R&M	Completed in 2021-22
Karnataka									
9	Bhadra River Bed units, KPCL (2x12)	SS	2x12	23.55	20.12	-	24	R&M	Completed in 2019-20
Tamil Nadu									
10	Sholayar-I, TANGEDCO (2x35)	SS	2x35	90.44	66.94	70 (LE) + 14(U)	84	RMU&LE	Completed in 2019-20
Kerala									
11	Sholayar, KSEB (3x18)	SS	3x18	199.55	84.26	54 (LE)	54	RM&LE	Completed in 2020-21
12	Idukki 1st stage, KSEB (3x130)	SS	3x130	89.90	65.76	-	390	R&M	Completed in 2020-21
Odisha									
13	Hirakud-I OHPCL (2x37.5)	SS	2x37.5 (U5&6)	158.77	101.83	75.00 (LE) + 12.2 (U)	87.2	RMU&LE	Completed in 2021-22
14	Hirakud-II (Chiplima), OHPCL (3x24)	SS	1x24 (U-3)	65.67	52.04	24.00 (LE)	24	RM&LE	Completed in 2019-20
Sub Total (A)			**2023.20**	**1143.94**	**848.68**	**505.4 [479.2(LE) + 26.2(U)**	**2049.40**		

@ This cost includes Scheme I only i.e. Rehabilitation of damaged/burnt equipments.

Abbreviations: R&M – Renovation & Modernisation;. U – Uprating; LE – Life Extension; Res – Restoration;

MW – Mega Watt; CS-Central Sector: SS- State Sector

State-wise List of Hydro RMU&LE schemes programmed for completion during 2022-27

Sl. No	Name of Project, Agency Inst. Cap. (No.x MW)	CS/ SS	Capacity Covered Under RMU&LE (No.x MW)	Est. Cost (Rs. in Crs.)	Actual Exp. (Rs. in Crs.)	Benefits (MW)	Capacity after RMU&LE	Category	Year of Completion
A. COMPLETED SCHEMES									
Himachal Pradesh									
1	Bhabha Power House, HPSEB (3x40)	SS	3x40	90.14	43.01	120(LE)	120	RM&LE	Completed in 2022-23
2	Bhakra LB, BBMB (5x108)	CS	5x108	489.77	583.86	540 (LE) + 90 (U)	630	RMU&LE	Completed in 2023-24
Uttarakhand									
3	Tiloth (Maneri Bhali - I), UJVNL (3x30)	SS	3x30	384.66	206.17	90 (LE)	90	RM&LE	Completed in 2022-23
4	Dhalipur, UJVNL (3x17)	SS	3x17	152.65	123.03	51 (LE)	51	RM&LE	Completed in 2023-24
Uttar Pradesh									
5	Rihand, UPJVNL (6x50)	SS	6x50	132.20	129.67	300 (LE)	300	RM&LE	Completed in 2022-23
Telangana									
6	Nagarjuna Sagar Phase-II works, TSGENCO (1x110+7x100.8)	SS	1x110+7x100.8	21.67	14.34	-	815.6	R&M	Completed in 2022-23
7	Nagarjuna Sagar Left Canal Power House, TSGENCO (2x30.6)	SS	2x30.6	30.99	1.50	-	61.2	R&M	Completed in 2022-23
Karnataka									
8	Munirabad Dam Power House, KPCL (2x9 + 1x10)	SS	2x9 + 1x10	4.60	2.20	-	28	R&M	Completed in 2022-23
9	Linganamakki Dam Power House, KPCL (2x27.5)	SS	2x27.5	1.34	1.34	-	55	R&M	Completed in 2022-23
10	Gerusoppa Dam Power House (Sharavathy Tail Race), KPCL (4x60)	SS	4x60	59.66	2.026	-	240	R&M	Completed in 2023-24
Assam									
11	Kopili Power Station, NEEPCO (4x50)	CS	4x50	1075.19	1201.65	200 (LE)	200	RM&LE	Completed in 2024-25
Sub Total(A)			**2500.80**	**2442.87**	**2308.80**	**1391 [1301(LE)+ 90(U)]**	**2590.80**		
B. Ongoing Schemes – UNDER IMPLEMENTATION									
Uttarakhand									
12	Dhakrani, UJVNL (3x11.25)	SS	3x11.25	137.31	70.26	33.75 (LE)	33.75	RM&LE	2026-27
Uttar Pradesh									
13	Obra, UPJVNL (3x33)	SS	3x33	58.80	48.25	99 (LE)	99	RM&LE	2025-26
Telangana									
14	Pochampad HPS Stage -1, TSGENCO (3x9)	SS	3x9	17.09	-	-	27	R&M	2026-27
Andhra Pradesh									
15	Upper Sileru Power House, APGENCO (4x60)	SS	4x60	10.53	5.35	-	240	R&M	2026-27
16	Nagarjunasagar Right Canal Power House, APGENCO (3x30)	SS	3x30	10.1	4.54	-	90	R&M	2025-26
17	Tungabhadra Dam, APGENCO (4x9)	SS	4x9	6.65	2.517	-	36	R&M	2026-27
18	Hampi Canal PH, APGENCO (4x9)	SS	4x9	-	-	-	36	R&M	2026-27
Karnataka									
19	Nagjhari (Unit-1 to 3) KPCL (6x150)	SS	3x150 (U-1 to 3)	266.00	80.5	450 (LE)	450	RM&LE	2025-26
20	Shivasamudram, KPCL (6x3+4x6)	SS	6x3+4x6	169.18	3.27	42 (LE)	42	RM&LE	2025-26
21	Kadra Dam Power House,	SS	3x50	44.47	2.627	-	150	R&M	2025-26
22	Kodasalli Dam Power House,	SS	3x40	50.60	2.654	-	120	R&M	2025-26
23	Sharavathy Generating Station, KPCL (10x103.5)	SS	10x103.5	196.56	-	1035 (LE)	1035	RM&LE	2025-26

Sl. No	Name of Project, Agency Inst. Cap. (No.x MW)	CS/ SS	Capacity Covered Under RMU&LE (No.x MW)	Est. Cost (Rs. in Crs.)	Actual Exp. (Rs. in Crs.)	Benefits (MW)	Capacity after RMU&LE	Category	Year of Completion
Jharkhand									
24	Panchet U-1, DVC (2x40)	CS	1x40 (U-1)	121.85	2.19	40 (LE) + 6 (U)	46	RMU&LE	2025-26
Tamil Nadu									
25	Moyar PH, TNPGCL (3x12)	SS	3x12	121.127	79.49	36 (LE) + 6 (U)	42	RMU&LE	2025-26
26	Kodayar PH-I, TNPGCL (1x60)	SS	1x60	80.96	24.93	60 (LE) + 10 (U)	70	RMU&LE	2025-26
Kerala									
27	Kuttiyadi, KSEB (3x25)	SS	3x25	377.41	58.26	75 (LE) + 7.5 (U)	82.5	RMU&LE	2025-26
Odisha									
28	Balimela, OHPCL (6x60)	SS	6x60	382.91	201.63	360 (LE)	360	RM&LE	2026-27
Assam									
29	Khandong Power Station, NEEPCO (2x23)	CS	2x23	277.74	235.74	46 (LE)	46	RM&LE	2025-26
Manipur									
30	Loktak, NHPC (3x35)	CS	3x35	273.59	107.44	105 (LE)	105	RM&LE	2025-26
Meghalaya									
31	Umiam St.III, (Kyrdemkulai) MePGCL (2x30)	SS	2x30	408.00	81.41	60 (LE) + 6 (U)	66	RMU&LE	2026-27
Sub Total (B)			**3140.75**	**3010.88**	**1011.06**	**2477.25 [2441.75(LE)+ 35.50(U)]**	**3176.25**		
C. Ongoing Schemes – UNDER TENDERING									
Rajasthan									
32	Rana Pratap Sagar RRVUNL (4x43)	SS	4x43	573.76	-	172 (LE) + 6 (U)	178	RMU&LE	2026-27
Karnataka									
33	Supa Dam Power House, KPCL (2x50)	SS	2x50	47.91	1.5	-	100	R&M	2025-26
West Bengal									
34	Maithon, DVC (2x20+1x23.2-U#2)	CS	2x20 (U-1&3)	109.29	7.76	40 (LE)	40	RM&LE	2025-26
Sub Total (C)			**312**	**730.96**	**9.26**	**218 [212(LE)+6(U)]**	**318.00**		

Sl. No	Name of Project, Agency Inst. Cap. (No.x MW)	CS/ SS	Capacity Covered Under RMU&LE (No.x MW)	Est. Cost (Rs. in Crs.)	Actual Exp (Rs. in Crs.)	Benefits (MW)	Capacity after RMU&LE	Category	Year of Completion
D. Ongoing Schemes – UNDER DPR PREPARATION/ FINALISATION/ APPROVAL									
Himachal Pradesh									
35	Giri, HPSEBL (2x30)	SS	2x30	440.12	-	60 (LE)	60	RM&LE	2026-27
Tamil Nadu									
36	Kodayar PH-II, TNPGCL (1x40)	SS	1x40	-	-	40 (LE) + 6 (U)	46	RMU&LE	2026-27
Kerala									
37	Idukki 1st and 2nd stage, KSEB (6x130)	SS	6x130	3.887	3.498	780 (LE)	780	RM&LE	2026-27
38	Idamalayar, KSEB (2x37.5)	SS	2x37.5	0.88	0.75	75 (LE)	75	RM&LE	2026-27
Sub Total (D)			**955.00**	**4.77**	**4.25**	**961 955(LE)+ 6(U)]**	**961.00**		
E. Ongoing Schemes – UNDER RLA STUDIES									
Punjab									
39	Anandpur Sahib Hydel Project, PSPCL (4x33.5)	SS	4x33.5	-	-	134 (LE)	134	RM&LE	2026-27
40	Mukerian St.I, St.II, St.III & St.IV, PSPCL (3x15, 3x15, 3x19.5& 3x19.5)	SS	3x15, 3x15, 3x19.5& 3x19.5	-	-	207 (LE)	207	RM&LE	2026-27
41	Shanan HEP, PSPCL (1x50+ 4x15)	SS	1x50+ 4x15	-	-	110 (LE)	110	RM&LE	2026-27
42	UBDC St.I & St.II, PSPCL (3x15+ 3x15.45)	SS	3x15+ 3x15.45	-	-	91.35 (LE)	91.35	RM&LE	2026-27
Madhya Pradesh									
43	Bansagar Ton-I, MPPGCL (3x105)	SS	3x105	-	-	315 (LE)	315	RM&LE	2026-27
Maharashtra									
44	Vaitarna, MSPGCL (1x60)	SS	1x60	-	-	60 (LE)	60	RM&LE	2026-27
45	Koyna Dam foot (Right Bank), MSPGCL (2x20)	SS	2x20	-	-	40 (LE)	40	RM&LE	2026-27
46	Koyna St-3, MSPGCL (4x80)	SS	4x80	-	-	320 (LE)	320	RM&LE	2026-27
Karnataka									
47	Varahi Underground Power House (4x115)	SS	2x115	-	-	-	230	R&M	2026-27
Kerala									
48	Sabarigiri, (Unit-1,2,3, 5) KSEB (4x55)	SS	4x55 (Unit-1,2, ,3, & 5)	-	-	220 (LE) + 20 (U)	240	RMU&LE	2026-27
Jharkhand									
49	Subernrekha, JUUNL (2x65)	SS	2x65	-	-	130 (LE)	130	RM&LE	2026-27
Sub Total (E)			**1857.35**	**0.00**	**0.00**	**1647.35 [1627.35(LE)+ 20(U)]**	**1877.35**		
Total (A+B+C+D+E)			**8765.90**	**6189.48**	**3333.36**	**6694.6 [6537.10(LE)+ 157.50(U)]**	**8923.40**		

Abbreviations: R&M – Renovation & Modernisation;. U – Uprating; LE – Life Extension; Res – Restoration;
MW – Mega Watt; CS-Central Sector: SS- State Sector

State-wise List of Hydro RMU&LE schemes programmed for completion during 2027-32

Sl. No	Name of Project, Agency Inst. Cap. (No.X MW)	CS/ SS	Capacity Covered Under RMU&LE (No.x MW)	Est. Cost (Rs. in Crs.)	Actual Exp. (Rs. in Crs.)	Benefits (MW)	Capacity after RMU&LE	Category	Completion Target
A.Ongoing Schemes – UNDER IMPLEMENTATION									
Uttarakhand									
1	Chilla (Ph B), UJVNL (4x36)	SS	4x36	490.56	32.24	144 (LE) + 12 (U)	156	RMU&LE	2027-28
Sub Total(A)			**144**	**490.56**	**32.24**	**156 144 (LE) + 12 (U)**	**156**		
B.Ongoing Schemes – UNDER TENDERING									
Himachal Pradesh									
2	Pong Power House, BBMB (6x66)	CS	6x66	402.00	1.15	396 (LE) + 54 (U)	450	RMU&LE	2028-29
Madhya Pradesh									
3	Gandhi Sagar, MPPGCL (5x23)	SS	5x23	433.68	4.17	115 (LE) + 10.83 (U)	125.83	RMU&LE	2029-30
Gujrat									
4	Kadana PSS, GSECL (4X60)	SS	4x60	84.95	3.15	240(LE)+20(U)	260	RMU&LE	2027-32
Sub Total(B)			**751**	**920.63**	**8.47**	**835.83 751 (LE) + 84.83(U)**	**835.83**		
C. Ongoing Schemes – UNDER DPR PREPARATION/FINALISATION/APPROVAL									
Uttarakhand									
5	Kulhal ,UJVNL (3x10)	SS	3x10	118.24	-	30(LE)	30	RM&LE	2027-32
6	Ramganga,UJVNL (3x66)	SS	3x66	455.2	-	198(LE)	198	RM&LE	2027-32
Madhya Pradesh									
7	Pench, MPPGCL (2x80)	SS	2x80	-	-	160 (LE)	160	RM&LE	2027-28
8	Bargi, MPPGCL (2x45)	SS	2x45	-	-	90 (LE)	90	RM&LE	2027-28
Andhra Pradesh									
9	Lower Sileru, APGENCO (4x115)	SS	4x115	698.94	1.8	460 (LE)	460	RM&LE	2029-30
10	Machkund St.I & St.II, APGENCO (3x17+ 3x23)	SS	3x17+ 3x23	-	-	120(LE)+9(U)	129	RMU&LE	2027-32
Sub Total(C)			**1058**	**1272.38**	**1.8**	**1067 1058(LE) + 9(U)**	**1067**		
D. Ongoing Schemes – UNDER RLA STUDIES									
Jammu & Kashmir (UT)									
11	Salal Stage-I, (Unit 1,2 &3) NHPC (3x115)	CS	3x115	-	-	345 (LE)	345	RM&LE	2027-32
12	Salal Stage-II, (Unit 4,5 &6) NHPC (6x115)	CS	3x115	-	-	345 (LE)	345	RM&LE	2027-32
Himachal Pradesh									
13	Chamera-I, NHPC (3x180)	CS	3x180	-	-	540 (LE)	540	RM&LE	2027-32
Uttarakhand									
14	Tanakpur, NHPC (3x31.4)	CS	3x31.4	-	-	94.2 (LE)	94.2	RM&LE	2027-32
15	Chibro, UJVNL (4x60)	SS	4x60	184.88	-	240 (LE)	240	RM&LE	2027-32
16	Khodri, UJVNL (4x30)	SS	4x30	169.63	-	120 (LE)	120	RM&LE	2027-32
Rajasthan									
17	Jawahar Sagar Power Station, Jawahar Sagar (3x33)	SS	3x33	-	-	99(LE)	99	RM&LE	2027-32
Tamil Nadu									
18	Kundah-I, TNPGCL (3x20)	SS	3x20	-	-	60 (LE)	60	RM&LE	2027-32
19	Kundah-II, TNPGCL (5x35)	SS	5x35	-	-	175 (LE)	175	RM&LE	2027-32
20	Kundah-III, TNPGCL (3x60)	SS	3x60	-	-	180 (LE)	180	RM&LE	2027-32
21	Kundah-IV, TNPGCL (2x50)	SS	2x50	-	-	100 (LE)	100	RM&LE	2027-32
22	Kundah-V, TNPGCL (2x20)	SS	2x20	-	-	40 (LE)	40	RM&LE	2027-32
23	Mettur Tunnel, TNPGCL (4x50)	SS	4x50	-	-	200 (LE)	200	RM&LE	2027-32
24	Sarkarpathy, TNPGCL (1x30)	SS	1x30	-	-	30 (LE)	30	RM&LE	2027-32
25	Sholayar-II, TNPGCL (1x25)	SS	1x25	-	-	25 (LE)	25	RM&LE	2027-32
26	Suruliyar, TNPGCL (1x35)	SS	1x35	-	-	35 (LE)	35	RM&LE	2027-32
27	Kadamparai PH, TNPGCL (4x100)	SS	4x100	-	-	400 (LE)	400	RM&LE	2027-32
28	Aliyar, TNPGCL (1x60)	SS	1x60	-	-	60 (LE)	60	RM&LE	2027-32
29	Lower Mettur-I , TNPGCL (2x15)	SS	2x15	-	-	30 (LE)	30	RM&LE	2027-32
30	Lower Mettur-II , TNPGCL (2x15)	SS	2x15	-	-	30 (LE)	30	RM&LE	2027-32
31	Lower Mettur-III , TNPGCL (2x15)	SS	2x15	-	-	30 (LE)	30	RM&LE	2027-32
32	Lower Mettur-IV , TNPGCL (2x15)	SS	2x15	-	-	30 (LE)	30	RM&LE	2027-32
Sub Total (D)			**3208.20**	**354.51**	**0.00**	**3208.20 [3208.20 (LE)+ 0(U)]**	**3208.20**		
Total (A+B+C+D)			**5161.20**	**3038.08**	**42.51**	**5267.03 [5161.20 (LE)+ 105.83(U)]**	**5267.03**		

Abbreviations: R&M – Renovation & Modernisation;. U – Uprating; LE – Life Extension; Res – Restoration;
MW – Mega Watt; CS-Central Sector: SS- State Sector

Abbreviations

1	APGENCO	Andhra Pradesh Generation Corporation Limited
2	BBMB	Bhakra Beas Management Board
3	DVC	Damodar Valley Corporation
4	GSECL	Gujarat State Electricity Corporation Limited
5	HPSEB	Himachal Pradesh State Electricity Board
6	J&KSPDC	Jammu & Kashmir State Power Development Corpn.
7	JSEB	Jharkhand State Electricity Board.
8	KPCL	Karnataka Power Corporation Limited
9	KSEB	Kerala State Electricity Board
10	MSPGCL	Maharashtra State Power Generation Corporation Limited
11	MePGCL	Meghalaya Power Generation Corporation Limited
12	MPPGCL	Madhya Pradesh Power Generation Corporation Limited
13	NEEPCO	North-East Electric Power Corporation Limited
14	OHPC	Odisha Hydro Power Corporation Limited
15	PSPCL	Punjab State Power Corporation Limited
16	RRVUNL	Rajasthan Rajya Vidyut Utpadan Nigam Limited
17	TNPGCL	Tamil Nadu Power Generation Corporation Limited
18	TSGENCO	Telangana State Power Generation Corporation Limited
19	UPJVNL	Uttar Pradesh Jal Vidyut Nigam Limited
20	UJVNL	Uttarakhand Jal Vidyut Nigam Limited
21	VVNL	Vishwesharayya Vidyut Nigam Limited
22	WBSEDCL	West Bengal State Electricity & Distribution Company Limited
23	AVR	Automatic Voltage Regulator
24	BOQ	Bill of Quantity
25	CERC	Central Electricity Regulatory Commission
26	CPRI	Central Power Research Institute
27	DPR	Detailed Project Report
28	DVR	Digital Voltage Regulator
29	JICA	Japan International Co-operation Agency
30	LOA	Letter of Award
31	RLA	Residual Life Assessment

CHAPTER-10

DEFINITIONS AND ABBREVIATIONS

CHAPTER-10

DEFINITIONS AND ABBREVIATIONS

10.1 DEFINITIONS

The definitions of different performance indices and other terms referred to in this review are as under:

a) Capacity: Capacity in MW is the Installed or Uprated/Derated capacity of the unit.

b) Forced Outage Non-Availability (FO) (%)

$$= \frac{(Cf1 \times hf1 + Cf2 \times hf2 \ldots\ldots\ldots\ldots\ldots\ldots + Cfn \times hfn) \times 100}{C \times H}$$

Where Cf1, Cf2 …… Cfn are the capacities in MW of the generating units of the station on forced outage and hf1,hf2……hfn are the duration of each outage in hours during the year. C is the total installed capacity of the station in MW and H is the total period in hours during the year.

c) Planned Maintenance Non-Availability (PM) (%)

$$= \frac{(Cp1 \times hp1 + Cp2 \times hp2 + \ldots\ldots\ldots\ldots\ldots\ldots + Cpn \times hpn) \times 100}{C \times H}$$

Where Cp1, Cp2 …… Cfn are the capacities in MW of the generating units of the station on planned shutdown and hp1, hp2 …… are the duration of each shutdown in hours during the year. C is the total installed capacity of the station in MW and H is the total period in hours during the year.

d) Operating availability (OA) (%) = (100-FO-PM)

e) Miscellaneous Non-Availability: Non-Availability of generating units due to one or more of the following factors:

- Low reservoir level/poor inflow
- Transmission line faults/constraints
- Excess weeding/silting
- No/reduced system demand
- Too high tail water level
- No irrigation demand
- Grid disturbance/failure
- Reserve shutdown/spinning reserve

f) Design Energy: The quantum of energy which could be generated in a 90% dependable year with 95% availability of installed capacity of the generating station.

g) Targeted Energy: Estimated energy generation during the year based on the likely rainfall data, storage position of the reservoirs and past records of energy generation etc.

h) Full Reservoir Level (FRL): The maximum level up to which the water could normally be stored in the reservoir for conservation and regulation for power generation.

i) Minimum Draw Down Level (MDDL): The minimum level up to which the reservoir could be depleted under normal operating conditions.

j) Types of H.E. Scheme: The H.E. Schemes have been classified into following four categories:

- Run-of-River without pondage
- Run-of River with pondage
- Storage Schemes
  - Purely power
  - Multipurpose projects
- Pumped Storage Schemes

10.2 Abbreviations

MW	Mega Watt	(10^6 Watts)
KWH	Kilo Watt hour (1 unit)	(10^3 Watts-hrs)
MU	Million Units	(10^6 Units**)**
MCM	Million Cubic Meters	(10^6 Cu.M.)
FRL	Full Reservoir Level	
MDDL	Minimum Draw Down Level	
HRT	Head Race Tunnel	
F.O.	Forced Outage	
P.M.	Planned Maintenance	

Abbreviations of Agencies

Northern Region			
1	Himachal Pradesh	ADHPL	Allain Duhangan Hydro Power Limited
		BVPC Limited	Beas Valley Power. Corp. Ltd. (BVPC)
		EPPL	Everest Power Private Limited
		GBHPPL	Greenko Budhil Hydro Power Pvt. Limited
		HBPCL	Himachal Baspa Power Company Limited
		HPPCL	Himachal Pradesh Power Corporation Limited
		HPSEB Limited	Himachal Pradesh State Electricity Board Limited
		HSPCL	Himachal Sorang Power Private Limited
		IAEPL	IA Hydro Energy Pvt Ltd
		JSW	JSW Energy Ltd.
		GMR BHHPL	GMR Bajoli Holi Hydro Power Private Limited
		MPCL	Malana Power Company Limited
		NTPGPL	Tidong Power Generation Private Limited
		NHPC Limited	National Hydro Power Corporation Limited
		NTPC Limited	National Thermal Power Corporation Limited
		SJVN Limited	Satluj Jal Vidyut Nigam Limited
2	Jammu & Kashmir	JKSPDC	J&K State Power Development Corporation.
3	Punjab	BBMB	Bhakra Beas Management Board
		PSPCL	Punjab State Power Corporation Limited
4	Rajasthan	RRVUNL	Rajasthan Rajya Vidyut Utpadan Nigam Limited
5	Uttar Pradesh	UPJVNL	Uttar Pradesh Jal Vidyut Nigam Limited
6	Uttarakhand	THDC	Tehri Hydro Development Corporation
		UJVNL	Uttarakhand Jal Vidyut Nigam Limited
		JPPVL	Jaiprakash Power Pvt. Venture Limited
		AHPC	Alaknanda Hydro Power Company
Western Region			
1	Gujarat	GSECL	Gujarat State Electricity Corporation Limited
		SSNNL	Sardar Sarovar Narmada Nigam Limited
2	Madhya Pradesh	MPPGCL	Madhya Pradesh Power Generation Co. Limited
		NHDC	Narmada Hydroelectric Development Co. Limited
3	Chhatisgarh	CSPGCL	Chhatisgarh State Power Generation Co. Limited
4	Maharashtra	DLHPPL	Dodson-Lindblom Hydro Power Private Limited

		MSPGCL	Maharashtra State Power Generating Co. Limited
		TPCL	Tata Power Company Limited
Southern Region			
1	Andhra Pradesh	APGENCO	Andhra Pradesh Power Generation Corporation Ltd.
2	Karnataka	KPCL	Karnataka Power Corporation Limited
3	Kerala	KSEBL	Kerala State Electricity Board Limited
4	Telangana	TSGENCO	Telangana State Power Generation Corporation Ltd.
5	Tamil Nadu	TANGEDCO	Tamil Nadu Generation & Distribution Co. Limited
Eastern Region			
1	Jharkhand	JUUNL	Jharkhand Urja Utpadan Nigam Limited
		DVC	Damodar Valley Corporation
2	Odisha	OHPC	Odisha Hydro Power Corporation
3	Sikkim	GIPL	Gati Infrastructure Pvt. Limited
		DEPL	Dans Energy Private Limited
		TUL	Teesta Urja Limited
		SKPPPL	Sneha Kinetic Power Projects Pvt. Limited
		SEPL	Shiga Energy Pvt. Limited
4	West Bengal	WBSEDCL	West Bengal State Electricity Distribution Co. Limited
North Eastern Region			
1	Assam	APGCL	Assam Power Generation Co. Limited
		NEEPCO	North Eastern Electric Power Corporation Limited
2	Meghalaya	MePGCL	Meghalaya Power Generation Corporation Limited