



उत्तराखण्ड पावर कारपोरेशन लि०

(उत्तराखण्ड सरकार का उपक्रम)

Uttarakhand Power Corporation Ltd.

(A. Govt. of Uttarakhand Undertaking)

CIN : U40109UR2001SGC025867

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No. 7338 /UPCL/Comm/UERC/

Dated: 01/09/2025

Secretary,
Uttarakhand Electricity Regulatory Commission,
VidyutNiyamakBhawan,
Near ISBT, Majra,
Dehradun.

Sub: Seeking In-principle approval for procurement of 500 MW RTC power at discovered rate for the period of 4 years (extension of one year if needed) on DEEP Portal against Medium Term Tender invited by UPCL.

Sir,

On the subject cited above, the following points are being submitted for kind consideration to Hon'ble Commission for granting In-principle approval for procurement of 500 MW RTC power at discovered rates for the period of 4 years(extension of one year if needed) on DEEP Portal against Medium Term Tender invited by UPCL

1. Hon'ble Commission in the clause 3.6.16 (Deficit/(Surplus) Energy) of the Tariff order dated 11.04.2025 issued direction to the UPCL as follows:
".....The Commission has, therefore, restricted the purchase of power from short term sources to 5% of the total energy availability at State Periphery, in line with the provisions of the MYT Regulations, and considered the procurement of balance deficit power through Medium/Long term sources....."
2. In between, a meeting was held on 16-01-2025 (Ann-1) chaired by Secretary (Energy), Government of Uttarakhand, in which the following members were also present:
 - ❖ Shri Sandeep Singhal, Managing Director, UJVNL.
 - ❖ Shri Anil Kumar, Managing Director, UPCL
 - ❖ Shri S.C. Baluni, Director (Project), UJVNL
 - ❖ Shri Ajay Kumar Agarwal, Director (Project), UPCL
3. In the aforesaid meeting, it was discussed that, as the 1181 MW Thermal Based Power Plant was planned to commission to meet out the demand of State through Joint Ventures of THDC India Limited and UJVNL. It was discussed in the meeting that Joint venture will not be in position to complete the project within time limit to meet out the demand of State. Therefore, it was decided to float a fresh tender for the quantum of 1320 MW under State Coal Allocation, Shakti-B through Tariff Based Competitive Bidding (TBCB mode) through consultation of M/s SBI Caps Limited to meet out the long term needs of base load requirements of the State. It is also to inform that the scheduling of power under above long-term arrangement may start from the year of 2029-30. It is also suggested that gap of shortage power from FY 2024-25 to FY 2029-30 can be procured under Medium Term tender through consultation of M/s SBI Caps Limited.
4. In light of above, M/s Mercados Energy who is working as consultant for day-to-day planning of power was requested to project power demand and availability scenario and to conclude amount of power which should be procured through medium term tender for period of about 4 Years (with extension of 01 years if needed). M/s Mercados via their report has suggested UPCL to procure 500 MW RTC Coal Base thermal power (Ann-2).

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5. Further, in compliance of the order of the aforesaid Committee and in accordance to the direction given by Hon'ble Commission , tender for procurement of 500 MW RTC power under medium term arrangement was invited by UPCL against tender specification No. 22/CE (COMM)/UPCL-22/MTPP/2025 and the same was uploaded on MSTC website (Through "DEEP" Portal) i.e. www.mstcecommerce.com.
6. After uploading of tender documents on DEEP Portal, the following bidders participated and raised the queries in various clauses of tender document through e-mails and pre-bid conference on dated 17-03-2025.
 - M/s Adani Power Limited (APL)
 - M/s Jindal India Thermal Power Limited(JITPL)
 - M/s Manikaran Power Limited(MPL)
 - M/s PTC India Limited (PTC)
 - M/s PowerPulse Trading Solutions Limited (PTSL)
 - M/s Jhabhu Power Ltd (JPL)
 - M/s NTPC VidyutVyapar Nigam Ltd (NVVN)
7. Consolidated reply of around 100 No of queries has been prepared by UPCL and out of some queries submitted to the Commission vide letter dated 03.04.2025 for approval of modifications/clarifications in some clauses of tender document however, the Hon'ble Commission vide letter dated 17.04.2025 directed to file a formal Petition in this regard.
8. Hon'ble Commission vide order dated 15-06-2025 in Point No. 2.9 of Order of Petition No. 40 of 2025 directed UPCL which states as follows:

Order on Petition No. 40 of 2025

"...2.9 The Commission would like to clarify that this Order is only limited to the extent of approval for modification/deviation sought by UPCL in the APP, RFQ and RFP documents and should not be construed, in any way, to be approval for quantum of power projection made by UPCL w.r.t demand and availability and subsequent requirement in upcoming period. As there can be various factors that might come into play due to the intervening time, and all such possibilities and effect needs to be considered, as far as possible for the purpose, therefore, the Commission deems it necessary to direct UPCL to justify to the satisfaction of the Commission, the requirement of power projected by it vis-à-vis quantum proposed to be procured through the aforesaid tender, before proceeding with the finalization of the tender process."

Further, in compliance of the above direction, UPCL vide letter no. 3571 dated 17-05-25 and letter no. 3952 date 09-06-2025 has requested Hon'ble Commission to provide the approval of quantum for medium term tender (500 MW).

9. After uploading of reply of the queries on DEEP Portal, the following bidders have participated in the Medium Term Tender):-

Name of firm/bidder & Address	MSTC registration against source of power for bidding purpose
M/s MB POWER MADHYA PRADESH LTD, VILLAGE LAHARPUR, P.O. JAITHARI, DISTRICT ANUPPUR,	MSTC REGN No. 74236, ANUPPUR THERMAL POWER PLANT OF POWER MADHYA PRADESH LTD CTU WR
M/s JINDAL POWER LIMITED , 3 RD FLOOR TOWER B JINDAL CENTER PLOT NO. 2 SECTOR 32 GURGAON	MSTC REGN No. 363805 JINDAL POWER LIMITED STG-2 OP JINDAL SUPER THERMAL POWER STATION U 3 & 4 CTU-WR
M/s POWERPULSE TRADING SOLUTIONS LIMITED, ADANI CORPORATE HOUSE SHATIGRAM NEAR VAISHNO DEVI CIRCLE GANDHINAGAR	MSTC REGN No. 552770 ADANI POWER LIMITED RAIGARH THERMAL POWER PLANT CTU

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10. Further, after technical evaluation of RfQ&RfP documents, the IPO of the medium term tender was opened and e-RA was also conducted on 30.07.2025 in which the following quantum of power & rates (**Ann-3**) were received: -

Sl. No.	Bidder Ref No	Cost of Generation (Rs per KWH)	Cost of transmission charges (Rs per KWH)	Cost of transmission losses (Rs per KWH)	Bid Quantity (MW)	Total Rate of CTU Periphery Rs./kWh	Source of power
1	Jindal Power Limited/363805	2.925	0	0	150	5.85	Jindal Power Limited Stg-2, OPJindal Super Thermal Power Station U 3& 4
2	POWERPULSE TRADING SOLUTIONS LIMITED/552770	2.925	0	0	350	5.85	Adani Power Limited Raigarh Thermal Power Plant
3	MB Power Madhya Pradesh Ltd/74236	2.995	0	0	100	5.99	Anuppur Thermal Power Plant of MB Power (Madhya Pradesh) Limited, Madhya Pradesh

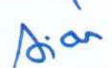
11. After bucket filling procedure, the following bidders were finalized along with the following quantum and rates:-

Sr. No.	Bidders	Quantum (MW)	Rate (Rs./kWh) at CTU periphery	Rate (Rs./unit) at State after considering transmission losses)*
1.	Jindal Power Limited	150	5.85	6.06
2.	POWERPULSE TRADING SOLUTIONS LIMITED	350	5.85	6.06

transmission charge is not included in this rate if power scheduled in the existing GNA and approximate 55 paise will be add if power is scheduled under TGNA)

12. It is pertinent to mention that the energy rates approved by Hon'ble Commission in tariff order for FY 2025-26 of UPCL for purchase of power under medium term arrangement is **Rs. 5.30/kWh** at State periphery.

In view of the above, it is humble requested kindly grant in-principle approval for procurement of 500 MW RTC power at above discovered price on DEEP Portal for the period of 4 years (with extension of one year if needed) against Medium Term Tender invited by UPCL.


(Ajay Kumar Agarwal)
Director (Project)

राज्य की ऊर्जा मांग की दीर्घकालिक आवश्यकताओं की पूर्ति हेतु विद्युत क्रय किये जाने की कार्ययोजना तैयार किये जाने के संबंध में दिनांक 16.01.2025 को उत्तराखंड सचिवालय में यूपीसीएल एवं यूजेवीएनएल के अधिकारियों की सचिव (ऊर्जा), उत्तराखण्ड शासन की अध्यक्षता में उनके कार्यालय कक्ष में आहूत बैठक का कार्यवृत्त।

बैठक में निम्नलिखित अधिकारियों द्वारा प्रतिभाग किया गया:-

- 1) श्री संदीप सिंघल, प्रबन्ध निदेशक, यूजेवीएनएल, देहरादून।
- 2) श्री अनिल कुमार, प्रबन्ध निदेशक, यूपीसीएल, देहरादून।
- 3) श्री एस सी बलूनी, निदेशक (परियोजना), यूजेवीएनएल, देहरादून।
- 4) श्री अजय कुमार अग्रवाल, निदेशक (परियोजना), यूपीसीएल, देहरादून।

बैठक में निम्नलिखित विषयों पर विचार-विमर्श के उपरान्त निम्नानुसार कार्यवाही हेतु निर्देशित किया गया:-

- अ) उत्तराखंड राज्य के सन्दर्भ में केन्द्रीय विद्युत प्राधिकरण (CEA) द्वारा किए गए संसाधन पर्याप्तता योजना (Resource Adequacy Plan) (अनुलग्नक-I) में वर्ष 2029-30 तक 1181 मेगावाट की अतिरिक्त थर्मल क्षमता वृद्धि की आवश्यकता का आंकलन किया गया है।
- ब) यूपीसीएल के पत्र दिनांक 07.03.2024 (अनुलग्नक-II) को यूजेवीएनएल को बेस लोड प्लांट क्षमता अधिमानतः (Preferably) थर्मल के लिए आवश्यकता प्रस्तुत की थी।
- ग) उपरोक्त उद्देश्यों के लिए, यूजेवीएनएल और टीएचडीसी का एक संयुक्त उद्यम बेस लोड थर्मल प्लांट की स्थापना हेतु विचारित था, लेकिन बैठक में इस बात पर चर्चा हुई कि उक्त संयुक्त उद्यम समय से परियोजना पर कार्यवाही आरम्भ नहीं कर पायेगा, जिससे राज्य की विद्युत आवश्यकता हेतु दीर्घकालिक योजना पर प्रतिकूल प्रभाव पड़ेगा। बैठक में इस बात पर भी चर्चा की गई कि राज्य का अगले 5 वर्षों में अपनी जीडीपी को दोगुना करने का लक्ष्य है, जिससे राज्य में विद्युत की अतिरिक्त मांग होगी।
- घ) उपरोक्त को ध्यान में रखते हुए बैठक में यह निर्णय लिया गया कि यूपीसीएल को वर्ष 2029-30/2030-31 तक 1320 मेगावाट (राज्य कोयला आवंटन, शक्ति बी-4 के तहत) क्षमता के ग्रीन फील्ड थर्मल पावर प्लांट से विद्युत क्रय हेतु टीबीसीबी (Tariff Based Competitive Bidding) मोड में निविदायां आमंत्रित करनी चाहिए जिससे कि राज्य में बेस लोड थर्मल प्लांट की आवश्यकताओं की दीर्घकालिक (Long Term Power Purchase) आधार पर पूर्ति की जा सके और तदनुसार विद्युत की आवश्यकता हेतु यूपीसीएल द्वारा यूजेवीएनएल को दिया गया पत्र दिनांकित 07.03.2024 वापस लिया जाता है।

- ई) क्योंकि उपरोक्त दीर्घकालिक आधार पर विद्युत आपूर्ति वर्ष 2029-30/2030-31 से आरम्भ होगी अतः 2029-30/2030-31 तक मांग-आपूर्ति अंतर को पाटने के लिए, बैठक में यह निर्णय लिया गया कि यूपीसीएल को केन्द्रीय विद्युत प्राधिकरण (CEA) की संसाधन पर्याप्तता योजना के अनुसार मध्यम अवधि (एमटीओए) में यथाआवश्यकता अनुरूप क्षमता के लिए निविदायें आमंत्रित कर विद्युत क्रय किया जाना चाहिए।
- च) उपरोक्त को ध्यान में रखते हुए यह भी निर्णय लिया गया कि यूपीसीएल द्वारा वर्तमान में दीर्घकालिक आधार पर आमंत्रित 300 मेगावाट विद्युत क्रय हेतु निविदाओं को रद्द कर दिया जाये एवं चूंकि यूपीसीएल द्वारा दीर्घकालिक अवधि/मध्यम अवधि के आधार पर विद्युत क्रय हेतु निविदायें आमंत्रित कर निविदाओं के अनिवार्यीकरण का कार्य प्रथम बार किया जा रहा है अतः यूपीसीएल द्वारा इस हेतु आमंत्रित की जाने वाली निविदाओं हेतु पूर्व में नियुक्त सलाहकार (एसबीआई कैप्स) को कन्सल्टैन्सी सेवाओं हेतु, पारस्परिक रूप से सहमत शर्तों पर रख लिया जाये।

(आर० मीनाक्षी सुन्दरम)
सचिव।

उत्तराखण्ड शासन
ऊर्जा अनुभाग-02
संख्या-55/12/2025-05-05/2018
देहरादून, दिनांक 27, जनवरी, 2025.....

प्रतिलिपि निम्नलिखित को उपरोक्तानुसार सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित:-

1. अपर सचिव, ऊर्जा विभाग-01 एवं 02, उत्तराखण्ड शासन।
2. प्रबन्ध निदेशक, यूजेवीएनएल, देहरादून।
3. प्रबन्ध निदेशक, यूपीसीएल, देहरादून।
4. निदेशक (परियोजना), यूजेवीएनएल, देहरादून।
5. निदेशक (परियोजना), यूपीसीएल, देहरादून।

आज्ञा से,
(गीता शरद)
अनु सचिव

Ann-2

**EMPOWERING
TOMORROW:
STRATEGIC ANALYSIS OF
UPCL'S MEDIUM TERM AND
LONG TERM POWER
PROCUREMENT NEEDS**

Prepared by:
Mercados Energy Markets India Pvt.
Ltd.

Doc. No: UDIN 0005 UPCL_MEMI; January 2025

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Empowering Tomorrow: Strategic Analysis of UPCL's Medium and Long-Term Power Procurement Needs

Background

Uttarakhand Power Corporation Limited (UPCL) wants to carry out an assessment of the demand supply scenario in the State of Uttarakhand for the forthcoming years so that decisions for power procurement on Medium Term and/or Long Term can be undertaken for reliable and uninterrupted power supply to the consumers of Uttarakhand.

1. With a view to fulfil its supply commitments, UPCL had floated a tender for procurement of 300MW power on long term RTC basis on 18.9.2023. The bid process was annulled, and another tender was issued on 19.11.2024 for similar capacity. Such bid process is still underway.
2. Around 18 months has lapsed since the issuance of the first tender, UPCL wishes to review the quantum requirement that would suffice the power requirement of the State.
3. In the view of the above, this report has assessed the existing power supply portfolio of UPCL including aspects such as historical growth in demand, demand forecast for the forthcoming years, existing contracted capacities along with upcoming contracted capacities etc. to ascertain quantum of power to be contracted under Medium Term and/or Long Term basis.
4. Currently, UPCL has an existing contracted capacity of 3,508 MW, out of which ~50% of power has been contracted from Central Generating Stations (CGS). Further, 70% of the total power being procured is from hydro and other renewable sources.
5. Around ~390 MW is procured from gas-based plants from central sector and IPPs. Summary of fuel wise contracted capacity is provided in the following table as below:

Table 1: Contracted Capacity

Type of Plant	Contracted Capacity (MW)
Coal	533
Gas (State IPP - 321 MW, Central - 69 MW)	390
Atomic	46
Hydro	1,970
Biomass	217
Hybrid Solar+Wind	100
Biomass	52
THDC – PSP*	200
Total	3,508

* Expected to start generation from Jan, 2025 and has therefore been considered in the current portfolio

6. On demand side, Uttarakhand State experiences two-peak seasons (Summer Peak Season from April to June and Winter Peak Season from December to February). Since FY 2020-21, peak demand is experienced in January in the winter season and in June in the summer season.
7. To meet the seasonal and daily variations in demand vs supply, UPCL procures power from exchanges through Day Ahead and Real Time Market (Collective Transactions) as well as firm power on short term basis through energy market products like Long Duration Contract (LDC), Discovery of Efficient Electricity Prices (DEEP Portal, Govt. of India) which comes under Bilateral Transactions etc.
8. In cases where liquidity in the power exchange is constrained, UPCL schedules Intra-State gas machines (accounts for average 265 MW of Supply) mainly in the peak period/ months, based on the requirement.
9. UPCL experiences a high demand-supply gap in the winter Peak-Demand Season due to low generation from solar and hydro sources in the winter season.

Demand Analysis

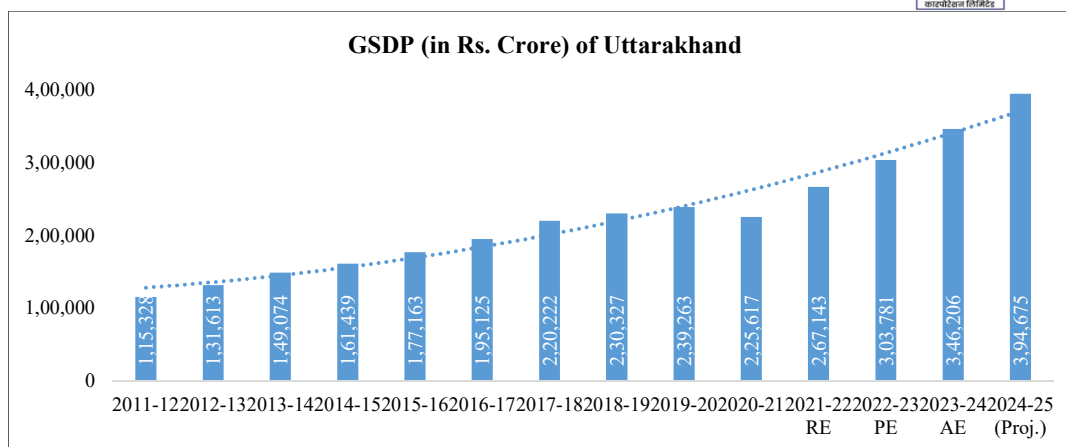
10. A review of historical demand, indicates a sharp rise in demand pattern in the FY 2024-25 with respect to previous years which is mainly due to development activities in the State, improved per capita income, improved purchasing power as well as weather phenomenon associated with climate changes.
11. According to Uttarakhand Budget 2024-25 & Economic Survey Report, the State is expected to achieve Gross State Domestic Product (GSDP) as per the following table:

Table 1: Gross State Domestic Product (GSDP) – Summary

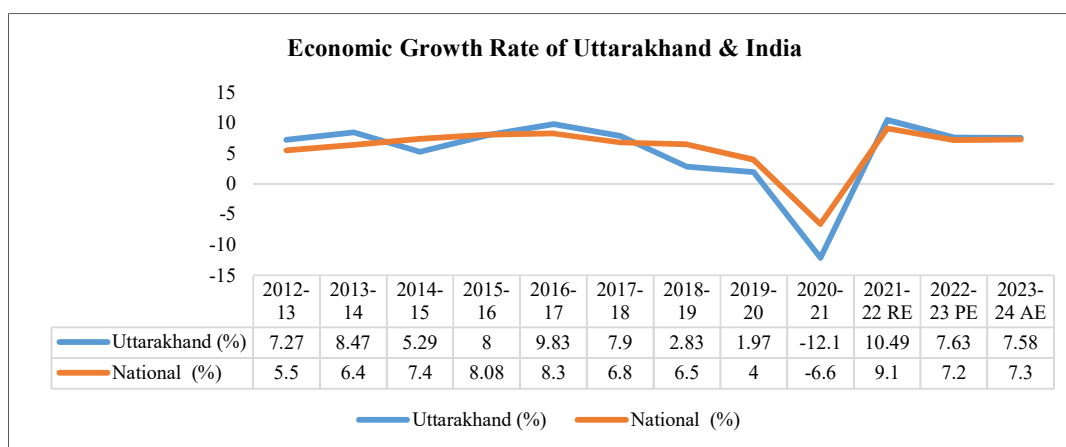
Gross State Domestic Product (GSDP*) – Summary				
S. No.	Financial Year	GSDP (in Rs. Crore)	GSDP Growth %	Remarks
1	2011-12	1,15,328	-	
2	2012-13	1,31,613	14%	
3	2013-14	1,49,074	13%	
4	2014-15	1,61,439	8%	
5	2015-16	1,77,163	10%	
6	2016-17	1,95,125	10%	
7	2017-18	2,20,222	13%	
8	2018-19	2,30,327	5%	
9	2019-20	2,39,263	4%	
10	2020-21	2,25,617	-6%	COVID-19 Year
11	2021-22 RE	2,67,143	18%	
12	2022-23 PE	3,03,781	14%	
13	2023-24 AE	3,46,206	14%	
14	2024-25 (Proj.)	3,94,675	14%	

**State Domestic Product is a measure, in monetary terms, of the volume of all goods and services produced within the State, during a given period of time accounted without duplication. These estimates serve as a prime indicator of economic prosperity of the State. (Source: Economic Survey Report).*

RE - Revised Estimate; **PE**- Provisional Estimate; **AE** – Advanced Estimate; **Proj.** – Projected



12. As per Budget 2024-25 and Economic Survey Report of Uttarakhand, the economic growth % of the State has been as per following pictorial presentation:



13. It is evident from above that Uttarakhand's growth has been higher in the last three years in comparison with National economic growth.

14. Furthermore, as per Budget 2024-25 and Economic Survey Report of Uttarakhand, the per capita income of the State in FY 2021-22 was Rs. 2,05,000, which rose to Rs. 2,60,000 in FY 2023-24, adding that the per capita income of the State increased by ~26% over last two years, which is higher than the national average.

Table 2: Details of Per Capita Income

Details of Per Capita Income				
Financial Year	National	% Growth (National)	Uttarakhand	% Growth (Uttarakhand)
2011-12	63,642		1,00,314	
2012-13	70,983	12%	1,13,654	13%
2013-14	79,118	11%	1,26,356	11%
2014-15	86,647	10%	1,36,099	8%
2015-16	94,797	9%	1,27,936	-6%

Details of Per Capita Income				
Financial Year	National	% Growth (National)	Uttarakhand	% Growth (Uttarakhand)
2016-17	1,04,880	11%	1,61,752	26%
2017-18	1,15,224	10%	1,80,858	12%
2018-19	1,25,946	9%	1,86,207	3%
2019-20	1,32,341	5%	1,90,558	2%
2020-21	1,27,065	-4%	1,74,526	-8%
2021-22	1,48,524	17%	2,05,246	18%
2022-23	1,72,276	16%	2,30,994	13%
2023-24	1,85,854	8%	2,60,201	13%

15. The figures depicted above show a promising economic development and increased power demand in the State in the upcoming years.
16. The historical peak demand and energy requirement in Uttarakhand is provided in the table below:

Table 3: Demand Summary

Demand Summary							
Particulars/ CY	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25*
Energy Requirement (MUs)	13,844	14,472	13,827	15,520	15,647	15,643	17,217
Growth (%)		4.5%	-4.5%	12.2%	0.8%	0.0%	10.1%
Equivalent Average Demand (MW)	1,580	1,652	1,578	1,772	1,786	1,786	1,965
Peak Demand (MW)	2,216	2,233	2,372	2,468	2,594	2,635	2,863
Growth (%)		0.8%	6.2%	4.0%	5.1%	1.6%	8.7%

* Forecast

17. Peak Demand has increased from 2,216 MW in FY 2018-19 to 2,863 MW in FY 2024-25 at a CAGR of ~4.4%. Similarly, energy requirement has increased from 13,844 MUs to 17,217 MUs at a CAGR of ~3.7% over the same period. However, there is sharp increase in peak demand by 8.7% in FY 2024-25 compared to FY 2023-24. The energy requirement is also expected to increase by ~10.1% in FY 2024-25 compared to last year.
18. The month-wise demand scenario for last 7 years has been provided in Appendix-2.
19. The Central Electricity Authority (CEA) conducts periodic Electric Power Survey (EPS) to assess the State wise/Union Territory wise/Region wise and all-India electricity demand on medium and long term basis.

Table 5: 20th EPS Demand Projections for Uttarakhand

20th EPS Demand Projections for Uttarakhand								
Financial Year	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32
Energy Requirement (in MUs) Ex Bus	18,087	19093	20142	21,238	22,374	23,702	24,622	25,524
Growth (%)	-	5.6%	5.5%	5.4%	5.3%	5.9%	3.9%	3.7%
Peak Demand (in MW) Ex Bus	2,905	3,072	3,249	3,433	3,623	3,847	4,004	4,159
Growth (%)	-	5.7%	5.8%	5.7%	5.5%	6.2%	4.1%	3.9%

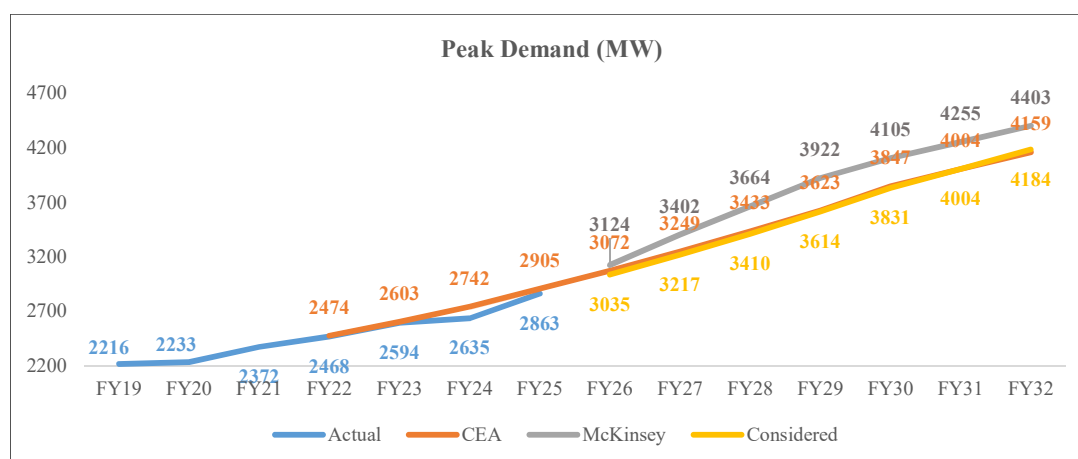
20. As per the CEA's projections, the average demand of the State shall rise at a rate of ~5.6% while peak demand shall rise at a rate of ~5.8% till FY 2029-30, post which demand is projected to increase by ~4%.
21. It is noteworthy that the 20th EPS report was published by CEA in November 2022 with base year being considered as FY 2020-21. Subsequently, post Covid-19, there has been significant economic development in the State along with the sharp increase in demand. Considering these factors, the demand projected by us is to found to be slightly higher than CEA projections.
22. The above fact is also corroborated by the actual scenario in FY 2024-25, wherein the peak demand has increased by ~10.1% compared to previous year and average demand is expected to increase by ~8.7% over the same period.
23. M/s. McKinsey & Co. has also carried out demand projections for the State of Uttarakhand which has been made available to us by UPCL. As per the report, demand has been projected under 3 different scenarios - 100%, 80% and 50% load step up realization. In these scenarios, 100%/ 80%/ 50% realization of additional/ step-up demand in future has been considered. The forecasted demand numbers under these scenarios has been summarized in the following table:

Table 6: Mckinsey Demand Projections

Financial Year	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35
100% Step Up Scenario											
Energy Requirement (in MUs) Ex Bus	19201	21082	22958	24724	26463	27703	28712	29713	30767	31890	33073
Growth %	-	9.80%	8.90%	7.69%	7.03%	4.69%	3.64%	3.49%	3.55%	3.65%	3.71%
80% Step Up Scenario											
Energy Requirement (in MUs) Ex Bus	19233	20908	22585	24182	25766	26954	27966	28980	30049	31187	32386
Growth %	-	8.71%	8.02%	7.07%	6.55%	4.61%	3.75%	3.63%	3.69%	3.79%	3.84%
50% Step Up Scenario											
Energy Requirement (in MUs) Ex Bus	18949	20283	21633	22948	24270	25362	26361	27381	28455	29598	30803
Growth %	-	7.04%	6.66%	6.08%	5.76%	4.50%	3.94%	3.87%	3.92%	4.02%	4.07%

24. It can be observed that M/s. McKinsey & Co. estimated growth in energy requirement to the tune of 7% to 10% under different scenarios in the initial 4-5 years and thereafter around 4% from FY 2030-31 onwards.
25. Mercados has independently run demand forecasts using its proprietary models and as per the results, demand growth is expected to be in the range of 5.75% to 6.25% under different scenarios up to FY 2029-30 and thereafter is expected to be in the range of 4.25% to 4.75%. Accordingly, the average and peak demand growth is considered to be 6% till FY 2029-30 and 4.5% after that for the analysis.

A comparison of peak demand projections has been provided in the following chart:



* Peak demand under McKinsey scenario has been deduced from their energy requirement projections.

Supply Analysis

26. UPCL has a contracted capacity of 3,508 MW from different types of sources including Coal, Atomic, Gas, Hydro, Hybrid (Solar + Wind), Solar and bagasse based co-generation. The details are as given below:

Table 7: Contracted Capacity & its Share in Portfolio (MW)

Contracted Capacity & its Share in Portfolio (MW)			
Source	Current	% Share in Portfolio	Share
Coal	533	15%	29% (Thermal)
Atomic	46	1%	
Gas	390	11%	
Biomass	52	1%	
Hydro	1,970	56%	71% (Renewable)
Hybrid	100	3%	
Solar	217	6%	
PSP*	200	6%	
Total	3,508	100%	100%

* Pumped Storage Plant (PSP) of THDC (however it has not yet started generation but will soon be available for UPCL as per latest available information)

27. The plant-wise details of existing contracted capacity are provided in Appendix-3.
28. It is expected that the contracted capacity shall be augmented to 4,281 MW by end of FY 2029-30. Source wise addition by FY 2029-30 is provided in the following table:

Table 8: Contracted Capacity including Expected Capacity Addition

Contracted Capacity including Expected Capacity Addition (MW)			
Source	Current	by FY 2029-30	Increase
Coal	533	559	26
Atomic	46	46	0
Gas	390	390*	0
Hydro	1,970	2,408	438
Hybrid	100	100	0
Solar	217	526	309
Biomass	52	52	0
PSP	200	200	0
Total	3,508	4,281	773

*107 MW Beta Infra gas plant may likely add in the portfolio, however PPA of the same has not been signed due to which the same is not considered in the analysis.

29. UPCL witnesses a significant variability in energy supply due to high share of renewable plants especially hydro.

30. The energy mix of some other States in India are provided below:

Table 9: Energy Mix of Uttar Pradesh (U.P.)

Madhya Pradesh			
Source	Contracted Capacity (MW)	Percentage Share (%)	Percentage Share Thermal & Renewable
Coal	20101	66%	74% (Thermal)
Gas	549	2%	
Nuclear	289	1%	
Biomass	1568	5%	
Hydro	3787	12%	26% (Renewable)
Solar	2730	9%	
Wind	1544	5%	
Total	22,840	100%	100%

Table 10: Energy Mix of Madhya Pradesh (M.P.)

Madhya Pradesh			
Source	Contracted Capacity (MW)	Percentage Share (%)	Percentage Share Thermal & Renewable
Coal	12646	55%	58% (Thermal)
Gas	50	0.2%	
Nuclear	586	3%	
Biomass	43	0.2%	
Hydro	3,406	15%	42% (Renewable)
Solar	3,523	15%	
Wind	2,586	11%	
Total	22,840	100%	100%

Table 11: Energy Mix of Maharashtra

Maharashtra			
Source	Contracted Capacity (MW)	Percentage Share (%)	Percentage Share Thermal & Renewable
Coal	20782	59%	71% (Thermal)

Maharashtra			
Source	Contracted Capacity (MW)	Percentage Share (%)	Percentage Share Thermal & Renewable
Gas	1076	3%	29% (Renewable)
Nuclear	740	2%	
Biomass	2569	7%	
Hydro	3197	9%	
Solar	4159	12%	29% (Renewable)
Wind	2805	8%	
Total	35328	100%	100%

Table 12: Energy Mix of Assam

Assam			
Source	Contracted Capacity (MW)	Percentage Share (%)	Percentage Share Thermal & Renewable
Coal	585	23%	54% (Thermal)
Gas	771	31%	
Hydro	840	34%	46% (Renewable)
Wind	100	4%	
Solar	204	8%	
Total	2500	100%	100%

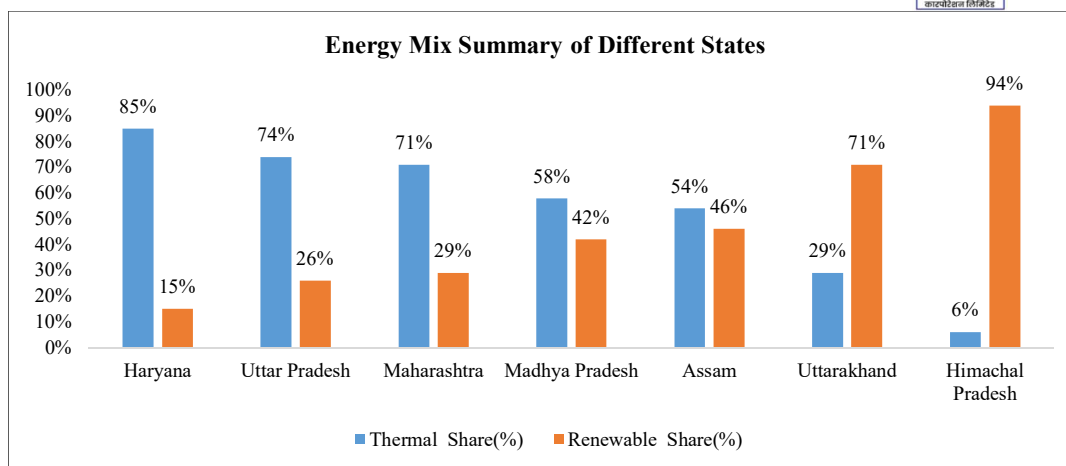
Table 13: Energy Mix of Himachal Pradesh (H.P.)

Energy Mix of Himachal Pradesh			
Source	Contracted Capacity (MW)	Percentage Share (%)	Percentage Share Thermal & Renewable
Coal	160	5%	6% (Thermal)
Nuclear	29	1%	
Hydro	3248	92%	94% (Renewable)
Solar	75	2%	
Total	3512	100%	100%

Table 14: Energy Mix of Haryana

Energy Mix of Haryana			
Source	Contracted Capacity (MW)	Percentage Share (%)	Percentage Share Thermal & Renewable
Coal	8139	58%	85% (Thermal)
Gas	569	4%	
Nuclear	101	1%	
Biomass	3134	22%	
Hydro	757	5%	15% (Renewable)
Wind	1202	9%	
Solar	168	1%	
Total	14069	100%	100%

31. A comparison of energy mix of different States is provided in the following chart:



32. It can be observed that Himachal Pradesh has a very high percentage of renewable energy in its total power portfolio. In this regard, as per Resource Adequacy Report published by CEA, Himachal Pradesh has been advised to increase their coal based contracted capacity by 797 MW from 160 MW (~5 times of the existing contracted capacity) from April 2027 onwards. The year-on-year capacities to be added as per Resource Adequacy study has been summarized in the following table:

Table 15: Himachal Pradesh - Additional Capacities as per Resource Adequacy Study

Himachal Pradesh: Additional Capacities as per Resource Adequacy Study by CEA										
Source	FY	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-32	2031-32
Coal	Planned	0	0	0	0	0	0	0	0	0
	Additional	0	0	0	0	797	35	61	49	60
Hydro	Planned	298	358	855	199	199	59	108	0	0
	Additional	0	0	0	0	0	0	0	0	0
Nuclear	Planned	0	0	0	26	0	0	0	0	0
	Additional	0	0	0	0	0	0	0	0	0
Solar	Planned	100	100	100	150	150	200	200	200	200
	Additional	0	0	0	0	0	0	0	0	0
Total	Planned	398	458	955	375	349	259	308	200	200
	Additional	0	0	0	0	797	35	61	49	60

Source: Resource Adequacy Report published by CEA for Himachal Pradesh (https://cea.nic.in/wp-content/uploads/resource_adequacy_st/2024/08/Resource_adequacy_Report_Himachal_Pradesh.pdf)

33. It is observed that Uttarakhand very similar to Himachal Pradesh has a high share of renewable energy in its overall power portfolio. It is also evident that this aspect makes it difficult for the State to supply reliable power to the consumers due to variability and seasonality of RE power. This leads to a scenario that UPCL is increasingly dependent on bilateral transactions and collective markets to meet the demand of the consumers.

34. In Resource Adequacy Report of Uttarakhand published by CEA, the UPCL has been advised to increase its contracted capacity as follows:

Table 16: Uttarakhand - Additional Capacities as per Resource Adequacy Report

Uttarakhand: Additional Capacities as per Resource Adequacy Study by CEA												
Source	FY	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-32	2031-32	2032-33	2033-34	2034-35
Coal	Planned	52	0	0	0	0	0	0	0	0	0	0
	Additional	0	0	0	0	0	1181	0	115	156	212	214
Nuclear	Planned	0	0	0	33	0	33	0	0	0	0	0
Hydro	Planned	0	0	80	0	383	0	624	0	0	0	0
Solar	Planned	246	100	45	0	8	0	0	0	0	0	0
SHP	Planned	15	0	0	13	96	35	17	0	0	0	0
PSP	Planned	200	0	0	0	0	0	0	0	0	0	0
DRE (Hydro)	Planned	5	0	0	45	6	4	0	0	0	0	0
DRE (Solar)	Planned	0	0	0	0	0	0	0	0	0	0	0
	Additional	0	0	0	0	41	70	65	68	78	94	103
Total	Planned	518	100	125	91	493	72	641	0	0	0	0
	Additional	0	0	0	0	41	1251	65	183	234	306	317

Source: Resource Adequacy Report published by CEA for Uttarakhand (https://cea.nic.in/wp-content/uploads/resource_adequacy_st/2024/09/Report_on_Resource_Adequacy_Plan_for_Uttarakhand_Upto_2034_35.pdf)

35. It can be seen, that the CEA has advised UPCL to augment the coal based contracted capacities by 1181 MW (~ 2 times the current coal contracted capacity) along with small quantum of Solar DREs from FY 2029-30 and 2028-29 respectively.
36. As per Uttarakhand State Solar Policy 2023, 1100 MW of utility scale solar power shall be contracted by UPCL. Currently, UPCL has contracted capacity of around 750 MW through various mode (300 MW PPA + 200 MW BPCL MOU + 250 MW MSSY-DRE) and 350 MW is pending. In the absence of PPA, 350 MW pending at Utility Scale is not considered in the instant analysis.
37. UPCL is planning to install 250 MW of solar plants at the consumer end under the Mukhyamantri Saur Swarojgar Yojana (MSSY) by the end of FY 2025-26, and an additional 1400 MW of Distributed Renewable Energy (DRE) solar capacity under the Solar Policy, 2023, by December 2027.
38. However, due to uncertainties and time constraints associated with the installation of solar systems at the consumer level, only 50% of the projected solar capacity under MSSY and 25% of the projected DRE capacity under the State Solar Policy have been factored into the analysis.
39. Furthermore, 200 MW Solar Capacity under MoU with BPCL has not been considered in availability, due to uncertainty in its execution at this stage.
40. THDC – PSP with capacity of 200 MW (4*50 MW) is expected to be commissioned in Jan, 2025 and has been considered in the analysis.
41. UPCL is expected to sign PPA for 1 Gas Machine (Beta Infra) with capacity of 107 MW. However, due to unavailability of PPA, the same has not been considered for the analysis. Given that PPA is yet

to be signed with Beta Infra, 4 Gas Machines of 107 MW each has not been considered for the analysis which are very high cost. Similarly, 69 MW gas based project from Central Sector has not been considered due to high cost of supply. These machines may be scheduled in case of extreme contingency situations like inter-state transmission constraints, periods of deficits due to forced outages etc. on case to case basis.

42. Based on the above factors, the contracted capacity considered for planned projects is summarized in the following table:

Table 17: Planned Contracted Capacity Considered for analysis

Plant Name	Source	Contracted Share (MW)	Considered for Analysis (MW)	Difference (MW)	Expected COD
Khurja THDC Unit 2	Coal	26	26	0	31-03-2025
Vishnugad Pipalkoti (444 MW) THDC	Hydro	71	71	0	31-03-2026
Tapovan Vishnugad (520 MW) NTPC	Hydro	83	83	0	31-03-2029
Rayat Aglar Pvt. Ltd. (6 MW)	Hydro	6	6	0	31-03-2026
Guptakashi (1.5 MW) UJVN	Hydro	2	2	0	31-03-2027
Tapovan (2 MW) UJVN	Hydro	2	2	0	31-03-2027
Khutani Syama	Hydro	21	21	0	31-03-2027
Tankul (12 MW) UJVN	Hydro	12	12	0	31-03-2027
Painagad (14 MW) UJVN	Hydro	15	15	0	31-03-2029
Sarkari Bhyol Rupsibagar (120 MW) UJVN	Hydro	120	120	0	31-03-2029
Barnigad K Ramchandra Rao	Hydro	23	23	0	31-03-2029
Tiuni Plasu (72 MW) UJVN	Hydro	72	72	0	31-03-2029
Lagrasu Aglar Private Limited	Hydro	4	4	0	31-03-2029
Sarju I Uttar Bhartat Power	Hydro	8	8	0	31-03-2029
UJVNL Solar	Solar	17	17	0	01-04-2025
SJVN (Solar) Phase 1	Solar	48	48	0	01-04-2025
UJVNL Solar	Solar	29	29	0	01-04-2025
SJVN (Solar) Phase 2	Solar	145	145	0	01-08-2025
UJVNL Solar	Solar	44	44	0	01-04-2026
UJVNL Solar	Solar	18	18	0	01-04-2027
UJVNL Solar	Solar	8	8	0	01-04-2028
UPP 4 BPCL MoU (200 MW)	Solar	100	0 (0%)	100	01-10-2027
UPP 4 BPCL MoU (200 MW)	Solar	100	0 (0%)	100	01-01-2028
PP 1 State Solar Policy – Consumer End	Solar - DRE	100	25 (25%)	75	31-03-2025
PP 2 State Solar Policy – Consumer End	Solar - DRE	100	25 (25%)	75	30-06-2025
PP 3 State Solar Policy – Consumer End	Solar - DRE	100	25 (25%)	75	30-09-2025
PP 4 State Solar Policy – Consumer End	Solar - DRE	100	25 (25%)	75	31-12-2025
PP 5 State Solar Policy – Consumer End	Solar - DRE	125	31 (25%)	94	31-03-2026
PP 6 State Solar Policy – Consumer End	Solar - DRE	125	31 (25%)	94	30-06-2026
PP 7 State Solar Policy – Consumer End	Solar - DRE	125	31 (25%)	94	30-09-2026

Plant Name	Source	Contracted Share (MW)	Considered for Analysis (MW)	Difference (MW)	Expected COD
PP 8 State Solar Policy – Consumer End	Solar - DRE	125	31 (25%)	94	31-12-2026
PP 9 State Solar Policy – Consumer End	Solar - DRE	125	31 (25%)	94	31-03-2027
PP 10 State Solar Policy – Consumer End	Solar - DRE	125	31 (25%)	94	30-06-2027
PP 11 State Solar Policy – Consumer End	Solar - DRE	125	31 (25%)	94	30-09-2027
PP 12 State Solar Policy – Consumer End	Solar - DRE	125	31 (25%)	94	31-12-2027
MSSY Phase 1 – Consumer End	Solar - MSSY - DRE	50	25 (50%)	25	01-02-2025
MSSY Phase 2 – Consumer End	Solar - MSSY - DRE	100	50 (50%)	50	01-04-2025
MSSY Phase 3 – Consumer End	Solar - MSSY - DRE	100	50 (50%)	50	01-04-2026

Note: Given the COD of consumer end Solar DREs and MSSY projects were not available, phase wise addition on quarterly basis has been considered.

43. As per prevailing generation profiles of different types of plants for FY24, an assessment of month-wise average availability has been worked out. The analysis shows a net average availability of ~49% of the contracted capacity (3508 MW). Month wise availability has been provided in following table:

Table 18: Average Monthly Availability of Existing Contracted Capacity

Average Monthly Availability (%) with Existing contracted capacity (3508 MW)		
Month	Average Availability (%)	Average Availability (MW)
Apr	42%	1473
May	49%	1719
Jun	60%	2105
Jul	66%	2315
Aug	72%	2526
Sep	62%	2175
Oct	44%	1544
Nov	40%	1403
Dec	39%	1368
Jan	37%	1298
Feb	39%	1368
Mar	41%	1438
Net Average	49%	1728

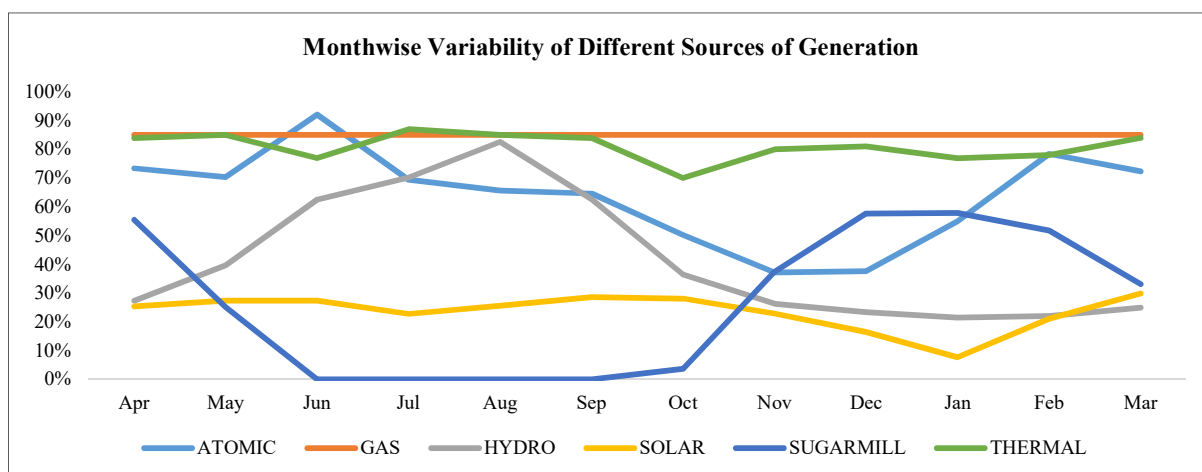
44. As evident from the monthly average above; out of ~3500 MW of contracted capacity, UPCL struggles with ~50% average availability on the whole for a year due to high share of contracted renewable resources.

45. The anticipated availability in the ensuing years is based upon the historical generation profile of the plants based upon their source characteristic.

Table 19: Generation profile of UPCL considered for various sources of plants

Generation Profile of Uttarakhand		
S. No.	Source	Average Availability/CUF (%)
1	Coal	81%
2	Nuclear	64%
3	State Hydro	44%
4	Central Hydro	39%
5	Solar	22%
6	Biomass	27%
7	PSP (Pumped Storage Plant)	<i>Deduced based on data provided by THDC</i>

Monthly Generation Profile of Different Sources:



Normative Availability ~ 85% shown for Gas Machines; However, gas machines are not considered in the analysis

The Appendix - 4 provides the time block wise and month wise generation profiles of different sources of power generators supplying power to UPCL.

Short Term Procurement

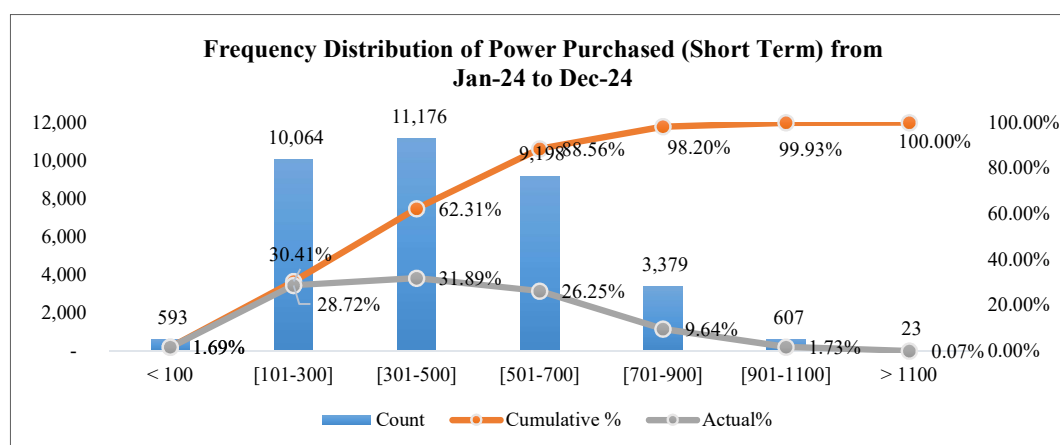
46. The State is already buying 3874 MUs (~450 MW) from short term market. If procurement from gas based plants are also considered, the quantum increases to 4534 MU (~ average >500 MW). The summary of short term power procured from Jan-24 to Dec-24 is provided in the following table:

Table 20: Short Term Power Purchase by Uttarakhand in CY 2024

Month	Short Term Procurement			Short Term Procurement + Gas based generation		
	MU	Total Cost (Rs. Crore)	Per unit rate (Rs./kWh)	MU	Total Cost (Rs. Crore)	Per unit rate (Rs./kWh)
Jan-24	362	193	5.34	451	293	6.50

Feb-24	277	147	5.29	321	211	6.58
Mar-24	303	123	4.07	303	123	4.07
Apr-24	385	168	4.37	486	278	5.71
May-24	293	138	4.70	438	281	6.41
Jun-24	335	176	5.24	493	308	6.25
Jul-24	232	111	4.77	339	200	5.90
Aug-24	435	224	5.15	452	271	6.00
Sep-24	280	148	5.29	280	148	5.29
Oct-24	362	148	4.09	362	148	4.09
Nov-24	312	126	4.03	312	126	4.03
Dec-24	298	159	5.35	298	159	5.35
Net	3874	1860	4.80	4534	2545	5.61

47. UPCL is purchasing short term power in the range of ~300 to 1100 MW power in 70% blocks of the year. The frequency distribution of quantum procured is provided in the following chart:



48. The above shortfall shall increase every year as the average and peak demand is increasing by ~6% and 4.5% respectively.

49. It is therefore pertinent for UPCL to reduce its dependency upon short term power arrangement to lower down risks related to unavailability of power in crucial deficit periods and high rates of power in exchanges.

Simulation Results

50. **Business As Usual (BAU) Scenario** captures the surplus/ deficit in ensuing years considering only the planned capacity addition. Year on year deficit in such scenario is provided in following table:

Table 21: Summary of Surplus-Deficit (MW) for Ensuing Years (Business As Usual –BAU)

FY	Surplus/ Deficit (MW)									
	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34	FY 2034-35
Peak Hours' Deficits* (MW)	569	614	734	887	878	1008	1145	1287	1435	1593

Average Deficit (excl. surplus blocks) # (MW)	665	686	769	895	910	1018	1140	1265	1393	1538
Total Deficit (MUs)	5808	5884	6622	7700	7848	8848	9906	11016	12194	13467

* Average Deficits of Morning Peak Hours (06:00 hrs to 09:00 hrs) and Evening Peak Hours (18:00 hrs to 22:00 hrs) for winter months (October to March) & Evening Peak Hours (18:00 hrs to 23:00 hrs) for summer months (April to September).

Average Deficits of Hours where no surplus exists.

51. The above table clearly indicates there is a deficit of >500 MW till FY 2029-30 and ~1200 MW from FY 2030-31 onwards.

52. **Optimized Scenario** captures the surplus/ deficit in ensuing years considering banking and medium term/ long term procurement. Banking considered for each ensuing year is provided in the following table:

Table 22: Tentative Banking for Ensuing Years

FY	Tentative Banking (MW) [Import +ve; Export -ve]											
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
FY 2025-26	0	150	50	0	-250	-300	-200	-200	200	500	100	-50
FY 2026-27	50	250	100	-200	-500	-400	-100	-100	300	600	100	-100
FY 2027-28	50	250	100	-200	-500	-400	-100	-100	300	600	100	-100
FY 2028-29	50	250	100	-200	-500	-400	-100	-100	300	600	100	-100
FY 2029-30	50	250	100	-200	-500	-400	-100	-100	300	600	100	-100
FY 2030-31	150	450	200	-300	-650	-500	-200	-300	200	700	300	-50
FY 2031-32	150	450	200	-300	-650	-500	-200	-300	200	700	300	-50
FY 2032-33	100	400	150	-200	-600	-500	-200	-300	250	700	250	-50
FY 2033-34	100	400	150	-200	-600	-500	-200	-300	250	700	250	-50
FY 2034-35	100	400	150	-200	-600	-500	-200	-300	250	700	250	-50

53. Further, medium term procurement of 500 MW till end of FY 2029-30 and procurement of long term power of 1320 MW (gross capacity) from FY 2030-31 (660 MW from Apr'2030 and another 660 MW from Oct'2030) has been considered in optimized scenario. Year on year deficit in this scenario is provided in following table:

Table 23: Summary of Surplus-Deficit (MW) for Ensuing Years (Post Optimization)

FY	Surplus/ Deficit (MW)									
	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32	FY 2032-33	FY 2033-34	FY 2034-35
Consolidated Peak Hours' Deficits* (MW)	125	167	260	387	378	222	61	169	260	400
Average Deficit (excl. surplus blocks) # (MW)	221	246	321	409	422	267	143	218	302	392
Total Deficit (MUs)	1604	1681	2353	3362	3524	1678	633	1257	2061	3110

* Average Deficits of Morning Peak Hours (06:00 hrs to 09:00 hrs) and Evening Peak Hours (18:00 hrs to 22:00 hrs) for winter months (October to March) & Evening Peak Hours (18:00 hrs to 23:00 hrs) for summer months (April to September).

Average Deficits of Hours where no surplus exists.

54. Appendix-1 presents the year wise BAU and optimised scenarios.

Time of Day (ToD) Tariff

55. As per the prevailing Time of Day (ToD) tariff structure approved by Hon'ble UERC and applicable in the State for industrial consumers, off-peak hours for both summer and winter hours are during the night hours. During these off-peak hours, the industrial consumers are provided discounted tariff in the range of Rs. 1.35 to 1.60 per unit. The industrial consumers are charged premium of Rs. 1.62 to 1.92 per unit for consumption during peak hours which is during the morning peak hours during winter months and during evening peak hours in winter and summer months.
56. The applicable ToD structure and applicable tariffs for industrial consumers approved by the Hon'ble UERC and currently applicable is provided below:

Table 24: Season wise Peak & Off-Peak Hours

Season-wise Peak and off-Peak hours				
Season/day of time	Morning peak	Normal Hours	Evening Peak	Off-Peak
Winter (Oct – Mar)	06:00-09:00 hrs	09:00-18:00 hrs	18:00-22:00 hrs	22:00-06:00 hrs
Summer (Apr – Sep)	-	07:00-18:00 hrs	18:00-23:00 hrs	23:00-07:00 hrs

Table 25: Energy Charges (Rs. / kWh) for HT Industry

Energy Charges (Rs./kVAh) for HT Industry			
Category	Normal Hours	Peak Hours	Off-Peak
LT Category	5.40	7.02	4.05
HT Category (Load Factor upto 40%)	6.00	8.32	4.50
HT Category (Load factor above 40%)	6.40	8.32	4.80

57. It is observed that the prices prevailing on the power exchanges during solar hours (typically from 8-17 hrs) is significantly lower than the prices prevailing during night hours for around 8 out of the 12 calendar months.
58. The summary of DAM and RTM prices from Jan-24 to Dec-24 is provided in the following tables:

Table 26: Power Prices Discovered in DAM Product of Energy Exchange

Power Prices Discovered in DAM (in Rs./MWh)												
Hours	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24
00:00-01:00	3029	3250	4287	8668	9656	9743	8884	5769	5037	4914	2795	2375
01:00-02:00	2786	3076	3697	7258	8124	8593	7129	4484	3957	3777	2645	2288
02:00-03:00	2615	2950	3463	5998	5374	7424	5519	3694	3558	3484	2619	2204
03:00-04:00	2560	2862	3355	5326	4311	6537	4894	3590	3377	3257	2585	2202
04:00-05:00	2708	3033	3434	4882	4298	6536	4827	3652	3383	3156	2605	2290
05:00-06:00	3343	3461	3756	4957	4306	5481	3775	3426	3319	3344	2848	2815
06:00-07:00	6050	5975	4312	5335	4251	5214	4692	4161	3692	3492	3365	3732
07:00-08:00	9336	8778	5150	4327	3438	3752	3700	3654	3123	3405	3858	6193
08:00-09:00	9970	8549	4452	3531	2935	2862	3047	2840	2515	2948	3454	6928

Power Prices Discovered in DAM (in Rs./MWh)												
Hours	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24
09:00-10:00	9899	7159	3944	3319	2837	2548	2783	2494	2300	2600	3048	5879
10:00-11:00	9671	5683	3440	2999	2786	2516	2419	2259	2163	2212	2429	3858
11:00-12:00	7208	4163	3248	2803	2668	2398	2284	2017	2105	2059	2149	3125
12:00-13:00	4707	3728	2962	2605	2711	2436	2146	1886	1889	1983	1914	2750
13:00-14:00	3568	3349	2639	2514	2675	2478	2166	1841	1869	1976	1814	2475
14:00-15:00	3743	3410	2901	2901	3464	3469	3128	2335	2395	2501	2294	2805
15:00-16:00	4399	3692	3173	3340	3844	4055	3660	2691	2935	2955	2827	3190
16:00-17:00	7433	4747	3617	3854	4205	4016	3215	3118	3204	3406	3573	4179
17:00-18:00	9627	6495	3702	4161	4001	4020	3284	3194	3914	4876	7225	8306
18:00-19:00	9801	7697	4700	5010	4638	4428	4106	4101	5796	8062	8146	9020
19:00-20:00	9437	8229	5688	6965	7789	7642	8429	8138	9104	7079	4181	4876
20:00-21:00	6969	6118	4491	6416	8922	9281	9507	8687	8421	5880	3555	3502
21:00-22:00	4377	4565	4442	7715	9626	9841	9843	8842	8393	5818	3300	3135
22:00-23:00	3442	3729	4227	8302	9855	9977	9900	8408	7328	5548	3017	2722
23:00-24:00	3253	3494	4226	9084	9887	10000	9861	7613	6764	5435	2858	2608

Table 27: Power Prices Discovered in RTM Product of Energy Exchange

Power Prices Discovered in RTM (in Rs./MWh)												
Hours	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24
00:00-01:00	3086	3036	4145	7827	7941	8614	7789	4419	4588	4111	2703	2311
01:00-02:00	2738	2878	3481	6506	5823	7585	6586	3748	3944	3577	2499	2124
02:00-03:00	2651	2696	3285	5238	4681	6301	5558	3183	3579	3419	2495	2029
03:00-04:00	2564	2593	3184	4530	3988	5044	5366	3056	3431	3259	2409	1999
04:00-05:00	2940	2899	3363	4666	4048	5133	5095	2882	3399	3343	2790	2239
05:00-06:00	3381	3479	3857	5405	4195	4910	4245	2943	3449	3522	3283	3128
06:00-07:00	5771	5521	4649	6294	4080	4999	4949	3686	4287	3720	3793	3862
07:00-08:00	8592	7669	5358	3866	2774	3456	3972	2959	3387	3682	4267	5630
08:00-09:00	9679	7497	4497	3293	2548	2661	3117	2365	2729	2903	3812	6173
09:00-10:00	9847	6753	3988	3194	2691	2665	2776	2305	2705	2844	3440	5400
10:00-11:00	9229	5176	3428	2879	2714	2518	2417	2040	2346	2524	2833	4146
11:00-12:00	7485	4338	3220	2874	2987	2765	2380	1995	2191	2526	2697	3553
12:00-13:00	5833	3776	3016	2560	3028	2956	2193	1877	2166	2490	2539	3068
13:00-14:00	4180	2983	2416	2134	2974	2949	1939	1564	2033	2287	2047	2592
14:00-15:00	4371	3277	2970	3009	3865	3864	2598	2226	2812	3040	2966	3050
15:00-16:00	5457	3627	3349	3720	4466	4601	3196	2567	3151	3443	3432	3641
16:00-17:00	7301	4515	3963	4271	4806	4623	3303	2834	3859	3851	4697	5006
17:00-18:00	9212	5341	3518	4382	4005	4342	3664	2980	4551	4930	6899	7251
18:00-19:00	9166	7154	4901	4425	3880	3975	4584	3977	5878	6884	7168	8094
19:00-20:00	8799	7503	6434	6529	6572	6479	8068	6884	7898	6463	3695	4995
20:00-21:00	7324	5139	4703	6039	7237	8034	8808	7072	6444	4926	3429	3687
21:00-22:00	5069	4070	4178	6927	7876	9084	9167	6807	6146	4560	3249	3233
22:00-23:00	3888	3495	4449	7719	8697	9481	9150	6371	5713	4252	3113	2808
23:00-24:00	3246	3224	4092	7965	8833	9274	8803	5508	5382	4016	2669	2393

59. The average prices on DAM and RTM in CY 2024 across different ToD time horizons is mapped in the table below:

Table 28: Season-wise Peak and off-Peak hours along with Exchange Rates

Season-wise Peak and off-Peak hours along with Exchange Rates					
Season/day of time	Power Market Product	Morning peak	Normal Hours	Evening Peak	Off-Peak
Winter (Oct – Mar)	-	06:00-09:00 hrs	09:00-18:00 hrs	18:00-22:00 hrs	22:00-06:00 hrs
Summer (Apr – Sep)	-	-	07:00-18:00 hrs	18:00-23:00 hrs	23:00-07:00 hrs
Winter (Oct – Mar)	DAM (Rs./kWh)	5.55	4.09	5.96	3.22
Summer (Apr – Sep)		-	2.96	7.85	5.84
Winter (Oct – Mar)	RTM (Rs./kWh)	5.39	4.25	5.62	3.11
Summer (Apr – Sep)		-	3.02	6.86	5.29

60. It can be observed from the above table that the prices during solar hours during the summer months are significantly lower than the prices during night hours. It can also be observed that while the prices during solar hours in winter months are higher than prices during night hours, but the difference of price in summer months far outweighs the difference during winter months. In view thereof, there is a very strong economic case for modification in the ToD structure applicable to industrial consumers.

61. Based on the analysis of the demand supply scenario for UPCL, the key recommendations with respect to power arrangement are as follows:

- a. It is recommended that UPCL ties up 500 MW of power on a medium-term basis to address immediate requirements up to FY 2029-30. The medium-term procurement can be undertaken for a duration of 5 years w.e.f April 2025. The Standard Bidding Documents issued by the Ministry of Power, Govt. of India can be utilized for the same based on a lump sum tariff mechanism. A similar lump sum tariff mechanism is also being followed by several States for medium term power procurement.
- b. To ensure the long-term adequacy of power supply, it is recommended that UPCL should tie-up 1,320 MW (gross capacity) of base load power on a long-term basis for a period of 25 years. The procurement should be done from new power stations as existing capacities would not be able to fulfil the supply commitment of 25 years. Similar model is also being followed by several States (such as Uttar Pradesh, Madhya Pradesh) undertaking long-term power procurement. Further, to secure fuel for the supply, the State should seek coal allocation under the SHAKTI B(iv) policy, as also adopted by other States. This approach will enhance supply reliability and align with the State's growing power needs. The suggestion for coal-based procurement is also in line with the CEA's recommendation in the Resource Adequacy study and it would balance the overall power procurement portfolio of Uttarakhand which currently is more hydro and RE reliant.

The year wise procurement is provided in the following table:

Table 29: Long Term/Medium Term Total Quantum of Suggested Arrangement

FY	Long Term/Medium Term Total Quantum of Suggested Arrangement		
	Long Term	Medium Term	Total Quantum
FY 26	0	500	500
FY 27	0	500	500
FY 28	0	500	500
FY 29	0	500	500
FY 30	0	500	500
FY 31 (Apr to Sep)	660	0	660
FY 31 (Oct to Mar)	1320	0	1320
FY 32	1320	0	1320
FY 33	1320	0	1320
FY 34	1320	0	1320
FY 35	1320	0	1320

- c. The tentative banking has been considered for portfolio optimization.

Table 30: Tentative Banking Considered for Optimization in Ensuing Years

FY	Tentative Banking (MW) [Import +ve; Export -ve]											
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
FY 2025-26	0	150	50	0	-250	-300	-200	-200	200	500	100	-50
FY 2026-27	50	250	100	-200	-500	-400	-100	-100	300	600	100	-100
FY 2027-28	50	250	100	-200	-500	-400	-100	-100	300	600	100	-100
FY 2028-29	50	250	100	-200	-500	-400	-100	-100	300	600	100	-100
FY 2029-30	50	250	100	-200	-500	-400	-100	-100	300	600	100	-100
FY 2030-31	150	450	200	-300	-650	-500	-200	-300	200	700	300	-50
FY 2031-32	150	450	200	-300	-650	-500	-200	-300	200	700	300	-50
FY 2032-33	100	400	150	-200	-600	-500	-200	-300	250	700	250	-50
FY 2033-34	100	400	150	-200	-600	-500	-200	-300	250	700	250	-50
FY 2034-35	100	400	150	-200	-600	-500	-200	-300	250	700	250	-50

However, if banking proposals are not fructified, the same quantum may be met by buying / selling in the exchange.

- d. The surplus power, if any, may be sold on exchanges or could be banked with other utilities. Further, the power may also be surrendered as per prevailing market conditions. Deficit for remaining time blocks after procurement from Medium Term/ Long Term may be met through procurement from energy exchanges on Day Ahead, Real Time basis and through other market products.
- e. It is further recommended that UPCL should immediately approach the Hon'ble UERC for revision in the ToD hours for the industrial consumers so that off-peak hours are shifted from night hours to day hours (solar hours). Such proposal for modification of the ToD structure should be substantiated by comprehensive data analysis of the consumption patterns of the industrial consumer categories and an assessment of the anticipated impact of the proposed ToD structure. This would optimise the fitment of the proposed power procurement and lead to significant cost savings to UPCL.

Appendix: Section 1-FY-wise Scenarios (BAU/Optimized)

- The following section provides the time block wise/ month wise surplus/ deficit under BAU and Optimized Scenarios till FY 2034-35.

FY 2025-26

BAU Scenario

Table 31: FY 2025-26 Surplus/Deficit Scenario (BAU/without firm power arrangement)

FY	FY 2025-26 (without firm power arrangement)											
Estimated Surplus/Deficit	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26
00:00-01:00	625	722	597	631	458	700	1001	779	919	1167	998	883
01:00-02:00	676	753	610	667	487	687	983	764	890	1122	978	877
02:00-03:00	697	696	732	698	533	670	945	751	881	1099	976	875
03:00-04:00	704	694	680	646	489	654	928	742	898	1097	972	929
04:00-05:00	807	783	651	533	296	485	767	624	765	965	818	743
05:00-06:00	848	842	547	503	280	440	720	673	895	1058	931	760
06:00-07:00	605	817	500	470	255	324	357	544	891	1091	909	649
07:00-08:00	341	713	404	372	69	204	196	406	794	935	587	348
08:00-09:00	463	687	371	339	-6	108	345	563	839	881	372	217
09:00-10:00	444	619	374	344	10	157	389	588	913	1084	498	311
10:00-11:00	582	703	515	420	30	389	622	715	1098	1450	772	524
11:00-12:00	563	726	517	378	-34	275	571	617	1012	1477	719	493
12:00-13:00	514	758	529	396	37	266	527	546	890	1306	624	432
13:00-14:00	507	850	575	457	42	309	629	617	917	1253	619	413
14:00-15:00	614	994	696	570	237	541	778	784	1032	1306	730	570
15:00-16:00	707	1095	796	696	375	719	1002	950	1108	1436	859	716
16:00-17:00	732	1008	739	636	348	647	904	834	959	1378	922	741
17:00-18:00	723	951	654	651	423	689	977	752	909	1216	852	841
18:00-19:00	524	705	518	651	486	452	404	161	479	891	645	519
19:00-20:00	274	711	538	672	458	268	149	192	684	1198	841	526
20:00-21:00	397	699	547	651	450	212	237	356	826	1306	898	605
21:00-22:00	580	731	575	615	427	242	376	321	687	1164	785	542
22:00-23:00	567	681	564	739	565	291	537	388	686	1109	819	607
23:00-24:00	622	790	671	683	528	635	976	770	948	1270	1054	867
Average RTC	588	780	579	559	302	432	638	602	872	1177	799	625
Average Deficit Only Hours' Qtm.(MW)	588	780	579	559	331	432	638	602	872	1177	799	625
Average Deficit Only Hours' Qtm.(MUs)	423	581	417	416	226	311	475	433	649	876	537	465
No. of Hours (Deficit)	24	24	24	24	22	24	24	24	24	24	24	24
Average Morning Peak Hours Deficits (MW)	-	-	-	-	-	-	300	505	842	969	623	405
Average Evening Peak Hours Deficits (MW)	468	705	548	665	477	293	291	258	669	1140	792	548
Average Peak Hours' Deficits (MW)	468	705	548	665	477	293	295	381	755	1054	708	476
Consolidated Peak Hours' Deficits (MW)	569											
Average 24 Hours' Only Deficits (MW)	665											
Total Deficit (MUs)	5808											

Surplus (-ve); Deficit (+ve)

Table 32: FY 2025-26 Surplus/Deficit Scenario (Optimized Output with firm power arrangement along with Tentative Banking)

FY	FY 2025-26 (with firm power arrangement of 500 MW in Medium Term)											
Estimated Surplus/Deficit	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26
Proposed Medium Term (MW)	500	500	500	500	500	500	500	500	500	500	500	500
Proposed Long Term (MW)	0	0	0	0	0	0	0	0	0	0	0	0
Tentative Banking (MW)	0	150	50	0	-250	-300	-200	-200	200	500	100	-50
00:00-01:00	125	72	47	131	208	500	701	479	219	167	398	433
01:00-02:00	176	103	60	167	237	487	683	464	190	122	378	427
02:00-03:00	197	46	182	198	283	470	645	451	181	99	376	425
03:00-04:00	204	44	130	146	239	454	628	442	198	97	372	479
04:00-05:00	307	133	101	33	46	285	467	324	65	-35	218	293
05:00-06:00	348	192	-3	3	30	240	420	373	195	58	331	310
06:00-07:00	105	167	-50	-30	5	124	57	244	191	91	309	199
07:00-08:00	-159	63	-146	-128	-181	4	-104	106	94	-65	-13	-102
08:00-09:00	-37	37	-179	-161	-256	-92	45	263	139	-119	-228	-233
09:00-10:00	-56	-31	-176	-156	-240	-43	89	288	213	84	-102	-139
10:00-11:00	82	53	-35	-80	-220	189	322	415	398	450	172	74
11:00-12:00	63	76	-33	-122	-284	75	271	317	312	477	119	43
12:00-13:00	14	108	-21	-104	-213	66	227	246	190	306	24	-18
13:00-14:00	7	200	25	-43	-208	109	329	317	217	253	19	-37
14:00-15:00	114	344	146	70	-13	341	478	484	332	306	130	120
15:00-16:00	207	445	246	196	125	519	702	650	408	436	259	266
16:00-17:00	232	358	189	136	98	447	604	534	259	378	322	291
17:00-18:00	223	301	104	151	173	489	677	452	209	216	252	391
18:00-19:00	24	55	-32	151	236	252	104	-139	-221	-109	45	69
19:00-20:00	-226	61	-12	172	208	68	-151	-108	-16	198	241	76
20:00-21:00	-103	49	-3	151	200	12	-63	56	126	306	298	155
21:00-22:00	80	81	25	115	177	42	76	21	-13	164	185	92
22:00-23:00	67	31	14	239	315	91	237	88	-14	109	219	157
23:00-24:00	122	140	121	183	278	435	676	470	248	270	454	417
Average RTC	88	130	29	59	52	232	338	302	172	177	199	175
Average Deficit (MW)	142	137	107	140	179	259	402	340	219	229	244	248
Average Deficit (MUs)	81	98	42	69	89	171	262	225	136	142	143	146
No. of Hours (Deficit)	19	23	13	16	16	22	21	22	20	20	21	19
Average Morning Peak Hours Deficits (MW)	-	-	-	-	-	-	51	205	142	91	309	199
Average Evening Peak Hours Deficits (MW)	57	55	20	165	227	93	90	38	126	223	192	98
Average Peak Hours' Deficits (MW)	57	55	20	165	227	93	70	121	134	157	250	148
Consolidated Peak Hours' Deficits (MW)	125											
Average 24 Hours' Deficits (MW)	221											
Total Deficit (MUs)	1604											

Surplus (-ve); Deficit (+ve)

Planned Capacities considered in FY26

Table 33: Planned Capacities Considered in FY 2025-26

Plant Name	Source	Contracted Share (MW)	Availability Considered in Analysis (MW)	Difference	Expected COD
MSSY Phase 1 – Consumer End	Solar - MSSY - DRE	50	25 (50%)	25	01-02-2025
Khurja THDC Unit 2	Coal	26	26	0	31-03-2025
PP 1 State Solar Policy – Consumer End	Solar - DRE	100	25 (25%)	75	31-03-2025
UJVNL Solar	Solar	17	17	0	01-04-2025
SJVN (Solar) Phase 1	Solar	50	50	0	01-04-2025
UJVNL Solar	Solar	29	29	0	01-04-2025
MSSY Phase 2 – Consumer End	Solar - MSSY - DRE	100	50 (50%)	50	01-04-2025
PP 2 State Solar Policy – Consumer End	Solar - DRE	100	25 (25%)	75	30-06-2025
SJVN (Solar) Phase 2	Solar	150	150	0	01-08-2025
PP 3 State Solar Policy – Consumer End	Solar - DRE	100	25 (25%)	75	30-09-2025
PP 4 State Solar Policy – Consumer End	Solar - DRE	100	25 (25%)	75	31-12-2025

BAU Scenario

Table 34: FY 2026-27 Surplus/Deficit Scenario (BAU/without firm power arrangement)

FY	FY 2026-27 (without firm power arrangement)											
Estimated Surplus/Deficit	Apr-26	May-26	Jun-26	Jul-26	Aug-26	Sep-26	Oct-26	Nov-26	Dec-26	Jan-27	Feb-27	Mar-27
00:00-01:00	872	984	856	280	-25	532	1096	858	1005	1265	1087	968
01:00-02:00	921	1016	867	313	1	520	1077	841	975	1217	1066	960
02:00-03:00	945	957	987	342	44	504	1038	828	965	1193	1064	958
03:00-04:00	953	955	932	287	-3	486	1019	819	984	1192	1060	1016
04:00-05:00	1059	1046	903	327	1	320	861	707	853	1063	908	831
05:00-06:00	1108	1107	794	292	-12	278	813	760	992	1165	1033	852
06:00-07:00	837	1054	716	232	-52	149	422	619	993	1209	1023	739
07:00-08:00	512	899	578	97	-280	-9	226	451	888	1054	668	398
08:00-09:00	592	814	490	20	-389	-148	338	573	913	995	413	228
09:00-10:00	512	674	438	-23	-385	-126	342	563	953	1174	489	299
10:00-11:00	595	719	540	12	-402	89	548	658	1109	1521	721	473
11:00-12:00	555	728	522	-55	-488	-61	483	549	1005	1529	650	429
12:00-13:00	502	759	527	-22	-390	-68	436	477	871	1336	547	368
13:00-14:00	504	867	587	57	-393	-25	564	576	927	1286	561	356
14:00-15:00	639	1046	748	196	-164	256	760	784	1072	1353	702	549
15:00-16:00	783	1198	895	363	11	481	1037	1004	1187	1513	869	722
16:00-17:00	881	1169	894	347	20	450	980	927	1069	1495	991	796
17:00-18:00	938	1172	861	406	126	522	1073	854	1020	1337	944	928
18:00-19:00	761	952	755	437	207	298	490	234	575	1008	742	605
19:00-20:00	513	974	793	481	182	100	223	259	784	1324	952	619
20:00-21:00	637	961	804	461	174	44	316	440	931	1439	1009	705
21:00-22:00	829	995	834	423	150	74	463	403	784	1287	889	638
22:00-23:00	814	940	822	395	87	117	626	468	778	1224	917	699
23:00-24:00	868	1052	929	335	49	463	1067	848	1038	1375	1147	956
Average RTC	755	960	753	250	-80	219	679	646	945	1273	852	671
Average Deficit Only Hours' Qtm.(MW)	755	960	753	291	88	316	679	646	945	1273	852	671
Average Deficit Only Hours' Qtm.(MUs)	544	714	542	189	33	170	505	465	703	947	573	499
No. of Hours (Deficit)	24	24	24	21	12	18	24	24	24	24	24	24
Average Morning Peak Hours Deficits (MW)	-	-	-	-	-	-	329	548	931	1086	701	455
Average Evening Peak Hours Deficits (MW)	711	964	802	440	160	127	373	334	769	1264	898	642
Average Peak Hours' Deficits (MW)	711	964	802	440	160	127	351	441	850	1175	800	548
Consolidated Peak Hours' Deficits (MW)	614											
Average 24 Hours' Only Deficits (MW)	686											
Total Deficit (MUs)	5884											

Surplus (-ve); Deficit (+ve)

Table 35: FY 2026-27 Surplus/Deficit Scenario (Optimized Output with firm power arrangement along with Tentative Banking)

FY	FY 2026-27 (with firm power arrangement of 500 MW in Medium Term)											
Estimated Surplus/Deficit	Apr-26	May-26	Jun-26	Jul-26	Aug-26	Sep-26	Oct-26	Nov-26	Dec-26	Jan-27	Feb-27	Mar-27
Proposed Medium Term (MW)	500	500	500	500	500	500	500	500	500	500	500	500
Proposed Long Term (MW)	0	0	0	0	0	0	0	0	0	0	0	0
Tentative Banking (MW)	50	250	100	-200	-500	-400	-100	-100	300	600	100	-100
00:00-01:00	322	234	256	-20	-25	432	696	458	205	165	487	568
01:00-02:00	371	266	267	13	1	420	677	441	175	117	466	560
02:00-03:00	395	207	387	42	44	404	638	428	165	93	464	558
03:00-04:00	403	205	332	-13	-3	386	619	419	184	92	460	616
04:00-05:00	509	296	303	27	1	220	461	307	53	-37	308	431
05:00-06:00	558	357	194	-8	-12	178	413	360	192	65	433	452
06:00-07:00	287	304	116	-68	-52	49	22	219	193	109	423	339
07:00-08:00	-38	149	-22	-203	-280	-109	-174	51	88	-46	68	-2
08:00-09:00	42	64	-110	-280	-389	-248	-62	173	113	-105	-187	-172
09:00-10:00	-38	-76	-162	-323	-385	-226	-58	163	153	74	-111	-101
10:00-11:00	45	-31	-60	-288	-402	-11	148	258	309	421	121	73
11:00-12:00	5	-22	-78	-355	-488	-161	83	149	205	429	50	29
12:00-13:00	-48	9	-73	-322	-390	-168	36	77	71	236	-53	-32
13:00-14:00	-46	117	-13	-243	-393	-125	164	176	127	186	-39	-44
14:00-15:00	89	296	148	-104	-164	156	360	384	272	253	102	149
15:00-16:00	233	448	295	63	11	381	637	604	387	413	269	322
16:00-17:00	331	419	294	47	20	350	580	527	269	395	391	396
17:00-18:00	388	422	261	106	126	422	673	454	220	237	344	528
18:00-19:00	211	202	155	137	207	198	90	-166	-225	-92	142	205
19:00-20:00	-37	224	193	181	182	0	-177	-141	-16	224	352	219
20:00-21:00	87	211	204	161	174	-56	-84	40	131	339	409	305
21:00-22:00	279	245	234	123	150	-26	63	3	-16	187	289	238
22:00-23:00	264	190	222	95	87	17	226	68	-22	124	317	299
23:00-24:00	318	302	329	35	49	363	667	448	238	275	547	556
Average RTC	205	210	153	-50	-80	119	279	246	145	173	252	271
Average Deficit (MW)	270	246	247	86	88	265	382	282	188	222	322	360
Average Deficit (MUs)	154	160	126	32	33	119	225	186	116	138	180	212
No. of Hours (Deficit)	19	21	17	12	12	15	19	22	20	20	20	19
Average Morning Peak Hours Deficits (MW)	-	-	-	-	-	-	22	148	131	109	245	339
Average Evening Peak Hours Deficits (MW)	210	214	202	140	160	72	77	21	131	250	298	242
Average Peak Hours' Deficits (MW)	210	214	202	140	160	72	49	85	131	180	272	290
Consolidated Peak Hours' Deficits (MW)	167											
Average 24 Hours' Deficits (MW)	246											
Total Deficit (MUs)	1681											

Surplus (-ve); Deficit (+ve)

Planned Capacities considered in FY27

Table 36: Planned Capacities Considered in FY 2026-27

Plant Name	Source	Contracted Share (MW)	Availability Considered in Analysis (MW)	Difference	Expected COD
Vishnugad Pipalkoti (444 MW)_THDC	Hydro	71	71	0	31-03-2026
Rayat_Aglar Pvt. Ltd. (6 MW)	Hydro	6	6	0	31-03-2026
PP 5 State Solar Policy – Consumer End	Solar - DRE	125	31 (25%)	94	31-03-2026
UJVNL Solar	Solar	45	45	0	01-04-2026
MSSY Phase 3 – Consumer End	Solar - MSSY - DRE	100	50 (50%)	50	01-04-2026
PP 6 State Solar Policy – Consumer End	Solar - DRE	125	31 (25%)	94	30-06-2026
PP 7 State Solar Policy – Consumer End	Solar - DRE	125	31 (25%)	94	30-09-2026
PP 8 State Solar Policy – Consumer End	Solar - DRE	125	31 (25%)	94	31-12-2026

Table 37: FY 2027-28 Surplus/Deficit Scenario (BAU/without firm power arrangement)

FY	FY 2027-28 (without firm power arrangement)											
Estimated Surplus/Deficit	Apr-27	May-27	Jun-27	Jul-27	Aug-27	Sep-27	Oct-27	Nov-27	Dec-27	Jan-28	Feb-28	Mar-28
00:00-01:00	981	1118	1000	397	81	637	1199	942	1096	1368	1181	1059
01:00-02:00	1027	1145	1005	425	103	621	1177	924	1063	1317	1159	1050
02:00-03:00	1046	1081	1124	449	143	602	1136	910	1053	1292	1156	1048
03:00-04:00	1056	1079	1066	390	93	583	1117	901	1072	1290	1153	1110
04:00-05:00	1166	1172	1032	431	97	418	961	794	948	1167	1006	928
05:00-06:00	1227	1238	923	396	88	382	924	863	1107	1286	1147	962
06:00-07:00	953	1175	832	328	37	248	531	738	1132	1353	1158	865
07:00-08:00	598	995	674	179	-222	59	299	544	1017	1208	794	489
08:00-09:00	658	887	564	86	-351	-111	377	630	1010	1140	505	272
09:00-10:00	550	714	489	24	-353	-104	353	586	1020	1304	539	319
10:00-11:00	609	742	575	43	-400	98	538	654	1149	1642	745	456
11:00-12:00	559	748	549	-33	-499	-80	462	536	1032	1633	656	399
12:00-13:00	502	780	551	2	-378	-85	411	463	888	1419	542	337
13:00-14:00	508	898	618	92	-385	-48	556	579	968	1365	568	331
14:00-15:00	656	1096	800	244	-134	271	786	817	1137	1439	730	556
15:00-16:00	826	1273	971	428	66	530	1101	1077	1283	1621	927	755
16:00-17:00	957	1269	995	428	99	527	1076	1031	1189	1633	1091	874
17:00-18:00	1040	1293	980	502	225	629	1195	972	1153	1484	1065	1045
18:00-19:00	876	1081	884	549	322	421	617	346	702	1155	872	729
19:00-20:00	633	1120	938	611	303	218	338	364	909	1471	1078	737
20:00-21:00	758	1108	950	590	294	158	428	541	1053	1587	1130	818
21:00-22:00	948	1140	981	550	268	187	572	497	894	1423	1001	743
22:00-23:00	929	1081	969	521	202	227	733	557	879	1346	1021	797
23:00-24:00	980	1193	1078	456	160	570	1173	936	1132	1486	1245	1049
Average RTC	835	1060	856	337	-6	290	753	717	1037	1393	936	739
Average Deficit Only Hours' Qtm.(MW)	835	1060	856	353	161	389	753	717	1037	1393	936	739
Average Deficit Only Hours' Qtm.(MUs)	601	788	616	252	80	222	560	516	771	1036	629	550
No. of Hours (Deficit)	24	24	24	23	16	19	24	24	24	24	24	24
Average Morning Peak Hours Deficits (MW)	-	-	-	-	-	-	402	638	1053	1233	819	542
Average Evening Peak Hours Deficits (MW)	829	1106	944	564	278	242	489	437	889	1409	1021	757
Average Peak Hours' Deficits (MW)	829	1106	944	564	278	242	445	537	971	1321	920	649
Consolidated Peak Hours' Deficits (MW)	734											
Average 24 Hours' Only Deficits (MW)	769											
Total Deficit (MUs)	6622											

Surplus (-ve); Deficit (+ve)

Table 38: FY 2027-28 Surplus/Deficit Scenario (Optimized Output with firm power arrangement along with Tentative Banking)

FY	FY 2027-28 (with firm power arrangement of 500 MW in Medium Term)											
Estimated Surplus/Deficit	Apr-27	May-27	Jun-27	Jul-27	Aug-27	Sep-27	Oct-27	Nov-27	Dec-27	Jan-28	Feb-28	Mar-28
Proposed Medium Term (MW)	500	500	500	500	500	500	500	500	500	500	500	500
Proposed Long Term (MW)	0	0	0	0	0	0	0	0	0	0	0	0
Tentative Banking (MW)	50	250	100	-200	-500	-400	-100	-100	300	600	100	-100
00:00-01:00	431	368	400	97	81	537	799	542	296	268	581	659
01:00-02:00	477	395	405	125	103	521	777	524	263	217	559	650
02:00-03:00	496	331	524	149	143	502	736	510	253	192	556	648
03:00-04:00	506	329	466	90	93	483	717	501	272	190	553	710
04:00-05:00	616	422	432	131	97	318	561	394	148	67	406	528
05:00-06:00	677	488	323	96	88	282	524	463	307	186	547	562
06:00-07:00	403	425	232	28	37	148	131	338	332	253	558	465
07:00-08:00	48	245	74	-121	-222	-41	-101	144	217	108	194	89
08:00-09:00	108	137	-36	-214	-351	-211	-23	230	210	40	-95	-128
09:00-10:00	0	-36	-111	-276	-353	-204	-47	186	220	204	-61	-81
10:00-11:00	59	-8	-25	-257	-400	-2	138	254	349	542	145	56
11:00-12:00	9	-2	-51	-333	-499	-180	62	136	232	533	56	-1
12:00-13:00	-48	30	-49	-298	-378	-185	11	63	88	319	-58	-63
13:00-14:00	-42	148	18	-208	-385	-148	156	179	168	265	-32	-69
14:00-15:00	106	346	200	-56	-134	171	386	417	337	339	130	156
15:00-16:00	276	523	371	128	66	430	701	677	483	521	327	355
16:00-17:00	407	519	395	128	99	427	676	631	389	533	491	474
17:00-18:00	490	543	380	202	225	529	795	572	353	384	465	645
18:00-19:00	326	331	284	249	322	321	217	-54	-98	55	272	329
19:00-20:00	83	370	338	311	303	118	-62	-36	109	371	478	337
20:00-21:00	208	358	350	290	294	58	28	141	253	487	530	418
21:00-22:00	398	390	381	250	268	87	172	97	94	323	401	343
22:00-23:00	379	331	369	221	202	127	333	157	79	246	421	397
23:00-24:00	430	443	478	156	160	470	773	536	332	386	645	649
Average RTC	285	310	256	37	-6	190	353	317	237	293	336	339
Average Deficit (MW)	315	356	338	166	161	325	435	350	251	293	416	446
Average Deficit (MUs)	208	232	193	82	80	166	270	231	179	218	233	263
No. of Hours (Deficit)	22	21	19	16	16	17	20	22	23	24	20	19
Average Morning Peak Hours Deficits (MW)	-	-	-	-	-	-	131	238	253	133	376	277
Average Evening Peak Hours Deficits (MW)	279	356	344	264	278	142	139	119	152	309	421	357
Average Peak Hours' Deficits (MW)	279	356	344	264	278	142	135	178	202	221	398	317
Consolidated Peak Hours' Deficits (MW)	260											
Average 24 Hours' Deficits (MW)	321											
Total Deficit (MUs)	2353											

Surplus (-ve); Deficit (+ve)

Planned Capacities considered in FY28

Table 39: Planned Capacities Considered in FY 2027-28

Plant Name	Source	Contracted Share (MW)	Availability Considered in Analysis (MW)	Difference	Expected COD
Guptakashi (1.5 MW)_UJVN	Hydro	2	2	0	31-03-2027
Tapovan (2 MW)_UJVN	Hydro	2	2	0	31-03-2027
Khutani Syama	Hydro	21	21	0	31-03-2027
Tankul (12 MW)_UJVN	Hydro	12	12	0	31-03-2027
PP 9 State Solar Policy – Consumer End	Solar - DRE	125	31 (25%)	94	31-03-2027
UJVNL Solar	Solar	18	18	0	01-04-2027
PP 10 State Solar Policy – Consumer End	Solar - DRE	125	31 (25%)	94	30-06-2027
PP 11 State Solar Policy – Consumer End	Solar - DRE	125	31 (25%)	94	30-09-2027
UPP 4 BPCL MoU (200 MW)	Solar	100	0 (0%)	100	01-10-2027
PP 12 State Solar Policy – Consumer End	Solar - DRE	125	31 (25%)	94	31-12-2027
UPP 4 BPCL MoU (200 MW)	Solar	100	0 (0%)	100	01-01-2028

Table 40: FY 2028-29 Surplus/Deficit Scenario (BAU/without firm power arrangement)

FY	FY 2028-29 (without firm power arrangement)											
Estimated Surplus/Deficit	Apr-28	May-28	Jun-28	Jul-28	Aug-28	Sep-28	Oct-28	Nov-28	Dec-28	Jan-29	Feb-29	Mar-29
00:00-01:00	1104	1277	1176	548	224	775	1323	1040	1199	1483	1286	1163
01:00-02:00	1147	1301	1176	571	241	755	1297	1020	1164	1429	1263	1153
02:00-03:00	1165	1232	1292	591	278	733	1253	1005	1153	1402	1260	1150
03:00-04:00	1176	1228	1231	527	225	711	1233	996	1173	1401	1257	1216
04:00-05:00	1288	1322	1193	568	229	548	1082	896	1057	1284	1116	1038
05:00-06:00	1363	1393	1083	536	226	518	1055	980	1236	1421	1275	1087
06:00-07:00	1091	1322	983	466	171	386	672	879	1290	1516	1316	1012
07:00-08:00	714	1123	811	310	-103	181	427	680	1181	1391	960	636
08:00-09:00	757	998	684	210	-241	-4	491	750	1162	1321	664	414
09:00-10:00	629	803	594	140	-246	-4	458	690	1154	1473	684	452
10:00-11:00	666	818	669	151	-308	192	634	745	1266	1805	875	579
11:00-12:00	607	821	639	70	-413	-1	554	621	1139	1789	777	515
12:00-13:00	546	853	638	106	-282	-7	499	542	986	1562	654	447
13:00-14:00	553	981	712	203	-289	29	649	660	1068	1501	675	436
14:00-15:00	713	1194	911	363	-24	370	894	911	1247	1576	842	667
15:00-16:00	903	1391	1100	559	190	647	1226	1189	1409	1765	1044	872
16:00-17:00	1060	1404	1142	567	233	658	1212	1158	1331	1788	1219	1000
17:00-18:00	1167	1444	1139	646	368	775	1346	1117	1313	1655	1206	1180
18:00-19:00	1018	1242	1051	700	473	579	773	486	859	1329	1026	874
19:00-20:00	782	1296	1117	776	461	373	485	492	1055	1638	1224	877
20:00-21:00	903	1284	1132	755	452	311	569	663	1191	1753	1268	951
21:00-22:00	1086	1314	1162	713	423	336	709	611	1020	1575	1128	866
22:00-23:00	1062	1251	1150	683	354	373	864	665	994	1481	1138	912
23:00-24:00	1108	1358	1257	611	308	710	1300	1039	1241	1609	1355	1158
Average RTC	942	1194	1002	474	123	414	875	827	1162	1539	1063	861
Average Deficit Only Hours' Qtm.(MW)	942	1194	1002	474	304	498	875	827	1162	1539	1063	861
Average Deficit Only Hours' Qtm.(MUs)	678	888	721	353	151	299	651	595	864	1145	714	640
No. of Hours (Deficit)	24	24	24	24	16	20	24	24	24	24	24	24
Average Morning Peak Hours Deficits (MW)	-	-	-	-	-	-	530	770	1211	1409	980	688
Average Evening Peak Hours Deficits (MW)	970	1277	1122	725	433	394	634	563	1031	1574	1162	892
Average Peak Hours' Deficits (MW)	970	1277	1122	725	433	394	582	666	1121	1492	1071	790
Consolidated Peak Hours' Deficits (MW)	887											
Average 24 Hours' Only Deficits (MW)	895											
Total Deficit (MUs)	7700											

Surplus (-ve); Deficit (+ve)

Table 41: FY 2028-29 Surplus/Deficit Scenario (Optimized Output with firm power arrangement along with Tentative Banking)

FY	FY 2028-29 (with firm power arrangement of 500 MW in Medium Term)											
Estimated Surplus/Deficit	Apr-28	May-28	Jun-28	Jul-28	Aug-28	Sep-28	Oct-28	Nov-28	Dec-28	Jan-29	Feb-29	Mar-29
Proposed Medium Term (MW)	500	500	500	500	500	500	500	500	500	500	500	500
Proposed Long Term (MW)	0	0	0	0	0	0	0	0	0	0	0	0
Tentative Banking (MW)	50	250	100	-200	-500	-400	-100	-100	300	600	100	-100
00:00-01:00	554	527	576	248	224	675	923	640	399	383	686	763
01:00-02:00	597	551	576	271	241	655	897	620	364	329	663	753
02:00-03:00	615	482	692	291	278	633	853	605	353	302	660	750
03:00-04:00	626	478	631	227	225	611	833	596	373	301	657	816
04:00-05:00	738	572	593	268	229	448	682	496	257	184	516	638
05:00-06:00	813	643	483	236	226	418	655	580	436	321	675	687
06:00-07:00	541	572	383	166	171	286	272	479	490	416	716	612
07:00-08:00	164	373	211	10	-103	81	27	280	381	291	360	236
08:00-09:00	207	248	84	-90	-241	-104	91	350	362	221	64	14
09:00-10:00	79	53	-6	-160	-246	-104	58	290	354	373	84	52
10:00-11:00	116	68	69	-149	-308	92	234	345	466	705	275	179
11:00-12:00	57	71	39	-230	-413	-101	154	221	339	689	177	115
12:00-13:00	-4	103	38	-194	-282	-107	99	142	186	462	54	47
13:00-14:00	3	231	112	-97	-289	-71	249	260	268	401	75	36
14:00-15:00	163	444	311	63	-24	270	494	511	447	476	242	267
15:00-16:00	353	641	500	259	190	547	826	789	609	665	444	472
16:00-17:00	510	654	542	267	233	558	812	758	531	688	619	600
17:00-18:00	617	694	539	346	368	675	946	717	513	555	606	780
18:00-19:00	468	492	451	400	473	479	373	86	59	229	426	474
19:00-20:00	232	546	517	476	461	273	85	92	255	538	624	477
20:00-21:00	353	534	532	455	452	211	169	263	391	653	668	551
21:00-22:00	536	564	562	413	423	236	309	211	220	475	528	466
22:00-23:00	512	501	550	383	354	273	464	265	194	381	538	512
23:00-24:00	558	608	657	311	308	610	900	639	441	509	755	758
Average RTC	392	444	402	174	123	314	475	427	362	439	463	461
Average Deficit (MW)	409	444	420	283	304	423	475	427	362	439	463	461
Average Deficit (MUs)	282	330	289	158	151	241	354	307	269	327	311	343
No. of Hours (Deficit)	23	24	23	18	16	19	24	24	24	24	24	24
Average Morning Peak Hours Deficits (MW)	-	-	-	-	-	-	130	370	411	309	380	288
Average Evening Peak Hours Deficits (MW)	420	527	522	425	433	294	234	163	231	474	562	492
Average Peak Hours' Deficits (MW)	420	527	522	425	433	294	182	266	321	392	471	390
Consolidated Peak Hours' Deficits (MW)	387											
Average 24 Hours' Deficits (MW)	409											
Total Deficit (MUs)	3362											

Surplus (-ve); Deficit (+ve)

Planned Capacities considered in FY29

Table 42: Planned Capacities Considered in FY 2028-29

Plant Name	Source	Contracted Share (MW)	Availability Considered in Analysis (MW)	Difference	Expected COD
UJVNL Solar	Solar	8	8	0	01-04-2028

Table 4: FY 2029-30 Surplus/Deficit Scenario (BAU/without firm power arrangement)

FY	FY 2029-30 (without firm power arrangement)											
Estimated Surplus/Deficit	Apr-29	May-29	Jun-29	Jul-29	Aug-29	Sep-29	Oct-29	Nov-29	Dec-29	Jan-30	Feb-30	Mar-30
00:00-01:00	1170	1307	1156	478	117	710	1354	1080	1257	1565	1355	1218
01:00-02:00	1210	1322	1148	498	130	692	1329	1061	1220	1508	1330	1209
02:00-03:00	1214	1249	1274	513	163	670	1282	1045	1209	1479	1328	1207
03:00-04:00	1223	1247	1208	447	107	648	1260	1034	1231	1477	1323	1276
04:00-05:00	1351	1355	1170	492	111	488	1111	940	1118	1364	1183	1096
05:00-06:00	1429	1430	1059	465	114	459	1082	1030	1310	1511	1354	1147
06:00-07:00	1125	1363	965	398	64	324	652	903	1345	1590	1366	1046
07:00-08:00	730	1164	794	243	-211	121	404	693	1212	1411	959	642
08:00-09:00	804	1046	671	146	-346	-58	523	822	1217	1336	654	428
09:00-10:00	684	855	585	78	-348	-54	506	778	1238	1536	725	495
10:00-11:00	739	875	666	89	-411	142	691	829	1361	1898	952	647
11:00-12:00	685	884	638	8	-515	-49	612	700	1237	1907	865	595
12:00-13:00	624	923	640	43	-385	-55	554	617	1079	1676	740	523
13:00-14:00	629	1056	713	143	-390	-13	706	733	1156	1611	755	509
14:00-15:00	794	1276	917	309	-117	333	942	983	1333	1687	921	740
15:00-16:00	982	1473	1108	509	98	612	1275	1251	1475	1875	1119	944
16:00-17:00	1139	1479	1147	516	139	623	1252	1202	1375	1890	1297	1069
17:00-18:00	1220	1500	1125	591	271	730	1376	1121	1325	1704	1242	1233
18:00-19:00	1023	1246	1009	639	375	514	737	445	846	1358	1046	892
19:00-20:00	756	1303	1085	719	366	286	420	475	1090	1728	1282	898
20:00-21:00	904	1289	1097	694	356	217	524	672	1259	1860	1347	989
21:00-22:00	1124	1327	1131	649	327	251	691	624	1081	1677	1203	907
22:00-23:00	1105	1263	1118	616	253	285	862	679	1050	1577	1213	956
23:00-24:00	1168	1394	1247	544	206	633	1325	1072	1296	1696	1426	1202
Average RTC	993	1234	986	409	20	355	895	866	1222	1622	1124	911
Average Deficit Only Hours' Qtm.(MW)	993	1234	986	409	200	460	895	866	1222	1622	1124	911
Average Deficit Only Hours' Qtm.(MUs)	715	918	710	305	99	262	666	624	909	1207	756	678
No. of Hours (Deficit)	24	24	24	24	16	19	24	24	24	24	24	24
Average Morning Peak Hours Deficits (MW)	-	-	-	-	-	-	526	806	1258	1446	993	705
Average Evening Peak Hours Deficits (MW)	982	1285	1088	663	335	311	593	554	1069	1656	1220	922
Average Peak Hours' Deficits (MW)	982	1285	1088	663	335	311	560	680	1164	1551	1106	814
Consolidated Peak Hours' Deficits (MW)	878											
Average 24 Hours' Only Deficits (MW)	910											
Total Deficit (MUs)	7848											

Surplus (-ve); Deficit (+ve)

Table 44: FY 2029-30 Surplus/Deficit Scenario (Optimized Output with firm power arrangement along with Tentative Banking)

FY	FY 2029-30 (with firm power arrangement of 500 MW in Medium Term)											
Estimated Surplus/Deficit	Apr-29	May-29	Jun-29	Jul-29	Aug-29	Sep-29	Oct-29	Nov-29	Dec-29	Jan-30	Feb-30	Mar-30
Proposed Medium Term (MW)	500	500	500	500	500	500	500	500	500	500	500	500
Proposed Long Term (MW)	0	0	0	0	0	0	0	0	0	0	0	0
Tentative Banking (MW)	50	250	100	-200	-500	-400	-100	-100	300	600	100	-100
00:00-01:00	620	557	556	178	117	610	954	680	457	465	755	818
01:00-02:00	660	572	548	198	130	592	929	661	420	408	730	809
02:00-03:00	664	499	674	213	163	570	882	645	409	379	728	807
03:00-04:00	673	497	608	147	107	548	860	634	431	377	723	876
04:00-05:00	801	605	570	192	111	388	711	540	318	264	583	696
05:00-06:00	879	680	459	165	114	359	682	630	510	411	754	747
06:00-07:00	575	613	365	98	64	224	252	503	545	490	766	646
07:00-08:00	180	414	194	-57	-211	21	4	293	412	311	359	242
08:00-09:00	254	296	71	-154	-346	-158	123	422	417	236	54	28
09:00-10:00	134	105	-15	-222	-348	-154	106	378	438	436	125	95
10:00-11:00	189	125	66	-211	-411	42	291	429	561	798	352	247
11:00-12:00	135	134	38	-292	-515	-149	212	300	437	807	265	195
12:00-13:00	74	173	40	-257	-385	-155	154	217	279	576	140	123
13:00-14:00	79	306	113	-157	-390	-113	306	333	356	511	155	109
14:00-15:00	244	526	317	9	-117	233	542	583	533	587	321	340
15:00-16:00	432	723	508	209	98	512	875	851	675	775	519	544
16:00-17:00	589	729	547	216	139	523	852	802	575	790	697	669
17:00-18:00	670	750	525	291	271	630	976	721	525	604	642	833
18:00-19:00	473	496	409	339	375	414	337	45	46	258	446	492
19:00-20:00	206	553	485	419	366	186	20	75	290	628	682	498
20:00-21:00	354	539	497	394	356	117	124	272	459	760	747	589
21:00-22:00	574	577	531	349	327	151	291	224	281	577	603	507
22:00-23:00	555	513	518	316	253	185	462	279	250	477	613	556
23:00-24:00	618	644	647	244	206	533	925	672	496	596	826	802
Average RTC	443	484	386	109	20	255	495	466	422	522	524	511
Average Deficit (MW)	443	484	404	234	200	360	495	466	422	522	524	511
Average Deficit (MUs)	319	360	279	123	99	205	368	336	314	388	352	380
No. of Hours (Deficit)	24	24	23	17	16	19	24	24	24	24	24	24
Average Morning Peak Hours Deficits (MW)	-	-	-	-	-	-	126	406	458	346	393	305
Average Evening Peak Hours Deficits (MW)	432	535	488	363	335	211	193	154	269	556	620	522
Average Peak Hours' Deficits (MW)	432	535	488	363	335	211	160	280	364	451	506	414
Consolidated Peak Hours' Deficits (MW)	378											
Average 24 Hours' Deficits (MW)	422											
Total Deficit (MUs)	3524											

Surplus (-ve); Deficit (+ve)

Planned Capacities considered in FY30

Table 45: Planned Capacities Considered in FY 2029-30

Plant Name	Source	Contracted Share (MW)	Availability Considered in Analysis (MW)	Difference	Expected COD
Tapovan Vishnugad (520 MW)_NTPC	Hydro	83	83	0	31-03-2029
Painagad (14 MW)_UJVN	Hydro	15	15	0	31-03-2029
Sarkari Bhyol Rupsibagar (120 MW)_UJVN	Hydro	120	120	0	31-03-2029
Barnigad K Ramchandra Rao	Hydro	23	23	0	31-03-2029
Tiuni Plasu (72 MW)_UJVN	Hydro	72	72	0	31-03-2029
Lagrasu Aglar Private Limited	Hydro	4	4	0	31-03-2029
Sarju I Uttar Bhartat Power	Hydro	8	8	0	31-03-2029

Table 46: FY 2030-31 Surplus/Deficit Scenario (BAU/without firm power arrangement)

FY	FY 2030-31(without firm power arrangement)											
Estimated Surplus/Deficit	Apr-30	May-30	Jun-30	Jul-30	Aug-30	Sep-30	Oct-30	Nov-30	Dec-30	Jan-31	Feb-31	Mar-31
00:00-01:00	1274	1441	1304	605	237	826	1458	1163	1344	1662	1444	1306
01:00-02:00	1311	1453	1292	621	246	804	1430	1142	1305	1602	1418	1296
02:00-03:00	1314	1376	1416	632	277	780	1381	1125	1293	1572	1415	1293
03:00-04:00	1324	1372	1347	563	218	756	1359	1115	1316	1571	1411	1366
04:00-05:00	1454	1481	1306	607	223	597	1212	1026	1209	1463	1276	1189
05:00-06:00	1544	1561	1195	585	230	574	1193	1129	1419	1625	1462	1252
06:00-07:00	1244	1493	1101	521	184	444	773	1023	1478	1728	1499	1170
07:00-08:00	844	1291	928	365	-92	240	521	814	1353	1565	1100	768
08:00-09:00	918	1174	808	271	-225	62	636	938	1355	1489	789	552
09:00-10:00	796	984	723	204	-226	68	618	888	1367	1679	850	612
10:00-11:00	847	1003	806	216	-291	263	799	932	1479	2036	1066	757
11:00-12:00	791	1013	780	134	-394	70	719	798	1349	2040	972	700
12:00-13:00	725	1053	782	168	-265	62	658	709	1184	1799	840	622
13:00-14:00	729	1190	858	271	-268	106	812	824	1256	1729	851	604
14:00-15:00	899	1416	1067	441	11	458	1053	1079	1437	1805	1018	838
15:00-16:00	1090	1617	1261	645	228	739	1392	1353	1585	1998	1220	1047
16:00-17:00	1252	1622	1300	650	268	750	1372	1311	1494	2020	1406	1177
17:00-18:00	1337	1639	1273	722	398	856	1504	1243	1460	1849	1361	1347
18:00-19:00	1145	1385	1154	770	503	648	869	563	978	1505	1176	1015
19:00-20:00	881	1451	1236	858	500	417	544	583	1213	1868	1405	1016
20:00-21:00	1027	1438	1250	833	489	345	644	775	1375	2000	1463	1102
21:00-22:00	1240	1473	1284	786	457	377	806	720	1187	1805	1310	1011
22:00-23:00	1217	1405	1271	752	381	408	972	769	1147	1691	1312	1053
23:00-24:00	1275	1533	1398	675	330	751	1431	1159	1388	1800	1519	1293
Average RTC	1103	1369	1131	537	142	475	1007	966	1332	1746	1233	1016
Average Deficit Only Hours' Qtm.(MW)	1103	1369	1131	537	305	475	1007	966	1332	1746	1233	1016
Average Deficit Only Hours' Qtm.(MUs)	794	1019	814	400	161	342	749	695	991	1299	828	756
No. of Hours (Deficit)	24	24	24	24	17	24	24	24	24	24	24	24
Average Morning Peak Hours Deficits (MW)	-	-	-	-	-	-	643	925	1395	1594	1129	830
Average Evening Peak Hours Deficits (MW)	1102	1430	1239	800	466	439	716	660	1188	1794	1339	1036
Average Peak Hours' Deficits (MW)	1102	1430	1239	800	466	439	680	793	1292	1694	1234	933
Consolidated Peak Hours' Deficits (MW)	1008											
Average 24 Hours' Only Deficits (MW)	1018											
Total Deficit (MUs)	8848											

Surplus (-ve); Deficit (+ve)

Table 47: FY 2030-31 Surplus/Deficit Scenario (Optimized Output with firm power arrangement along with Tentative Banking)

FY	FY 2030-31 (with firm Long Term power arrangement 600 MW from Apr'30 & additional 600 MW from Oct'30)											
Estimated Surplus/Deficit	Apr-30	May-30	Jun-30	Jul-30	Aug-30	Sep-30	Oct-30	Nov-30	Dec-30	Jan-31	Feb-31	Mar-31
Proposed Medium Term (MW)	0	0	0	0	0	0	0	0	0	0	0	0
Proposed Long Term (MW)	600	600	600	600	600	600	1200	1200	1200	1200	1200	1200
Tentative Banking (MW)	150	450	200	-300	-650	-500	-200	-300	200	700	300	-50
00:00-01:00	524	391	504	305	287	726	458	263	-56	-238	-56	156
01:00-02:00	561	403	492	321	296	704	430	242	-95	-298	-82	146
02:00-03:00	564	326	616	332	327	680	381	225	-107	-328	-85	143
03:00-04:00	574	322	547	263	268	656	359	215	-84	-329	-89	216
04:00-05:00	704	431	506	307	273	497	212	126	-191	-437	-224	39
05:00-06:00	794	511	395	285	280	474	193	229	19	-275	-38	102
06:00-07:00	494	443	301	221	234	344	-227	123	78	-172	-1	20
07:00-08:00	94	241	128	65	-42	140	-479	-86	-47	-335	-400	-382
08:00-09:00	168	124	8	-29	-175	-38	-364	38	-45	-411	-711	-598
09:00-10:00	46	-66	-77	-96	-176	-32	-382	-12	-33	-221	-650	-538
10:00-11:00	97	-47	6	-84	-241	163	-201	32	79	136	-434	-393
11:00-12:00	41	-37	-20	-166	-344	-30	-281	-102	-51	140	-528	-450
12:00-13:00	-25	3	-18	-132	-215	-38	-342	-191	-216	-101	-660	-528
13:00-14:00	-21	140	58	-29	-218	6	-188	-76	-144	-171	-649	-546
14:00-15:00	149	366	267	141	61	358	53	179	37	-95	-482	-312
15:00-16:00	340	567	461	345	278	639	392	453	185	98	-280	-103
16:00-17:00	502	572	500	350	318	650	372	411	94	120	-94	27
17:00-18:00	587	589	473	422	448	756	504	343	60	-51	-139	197
18:00-19:00	395	335	354	470	553	548	-131	-337	-422	-395	-324	-135
19:00-20:00	131	401	436	558	550	317	-456	-317	-187	-32	-95	-134
20:00-21:00	277	388	450	533	539	245	-356	-125	-25	100	-37	-48
21:00-22:00	490	423	484	486	507	277	-194	-180	-213	-95	-190	-139
22:00-23:00	467	355	471	452	431	308	-28	-131	-253	-209	-188	-97
23:00-24:00	525	483	598	375	380	651	431	259	-12	-100	19	143
Average RTC	353	319	331	237	192	375	7	66	-68	-154	-267	-134
Average Deficit (MW)	387	372	384	346	355	457	344	224	79	119	19	119
Average Deficit (MUs)	256	242	242	193	187	274	117	94	17	18	1	37
No. of Hours (Deficit)	22	21	21	18	17	20	11	14	7	5	1	10
Average Morning Peak Hours Deficits (MW)	-	-	-	-	-	-	0	80	78	0	0	20
Average Evening Peak Hours Deficits (MW)	352	380	439	500	516	339	0	0	0	100	0	0
Average Peak Hours' Deficits (MW)	352	380	439	500	516	339	0	40	39	50	0	10
Consolidated Peak Hours' Deficits (MW)	222											
Average 24 Hours' Deficits (MW)	267											
Total Deficit (MUs)	1678											

Surplus (-ve); Deficit (+ve)

Table 48: FY 2031-32 Surplus/Deficit Scenario (BAU/without firm power arrangement)

FY	FY 2031-32(without firm power arrangement)											
Estimated Surplus/Deficit	Apr-31	May-31	Jun-31	Jul-31	Aug-31	Sep-31	Oct-31	Nov-31	Dec-31	Jan-32	Feb-32	Mar-32
00:00-01:00	1382	1581	1460	738	363	947	1566	1250	1435	1763	1537	1398
01:00-02:00	1417	1590	1443	750	368	921	1536	1226	1394	1701	1510	1386
02:00-03:00	1418	1509	1564	757	396	895	1485	1209	1381	1669	1506	1383
03:00-04:00	1430	1504	1493	683	334	869	1462	1199	1405	1668	1503	1460
04:00-05:00	1562	1613	1448	728	339	711	1318	1115	1304	1565	1373	1286
05:00-06:00	1664	1697	1337	710	351	694	1308	1233	1533	1743	1575	1362
06:00-07:00	1368	1630	1243	649	309	570	899	1148	1617	1871	1638	1301
07:00-08:00	964	1423	1069	493	31	364	643	941	1501	1727	1247	900
08:00-09:00	1037	1309	950	401	-99	188	755	1059	1499	1649	931	681
09:00-10:00	913	1118	869	337	-99	195	735	1002	1501	1829	981	735
10:00-11:00	960	1137	952	348	-164	388	913	1039	1603	2181	1185	872
11:00-12:00	902	1148	928	266	-267	195	831	900	1466	2179	1084	809
12:00-13:00	830	1188	931	298	-140	185	767	805	1293	1927	944	725
13:00-14:00	834	1330	1009	404	-141	231	922	918	1360	1852	950	703
14:00-15:00	1008	1562	1224	578	145	588	1170	1178	1544	1929	1120	940
15:00-16:00	1204	1767	1421	786	363	872	1514	1458	1701	2126	1326	1154
16:00-17:00	1371	1771	1460	791	402	883	1497	1424	1619	2156	1519	1290
17:00-18:00	1459	1784	1428	860	530	989	1639	1371	1601	2000	1485	1466
18:00-19:00	1273	1531	1306	907	637	788	1008	686	1115	1658	1312	1143
19:00-20:00	1013	1605	1393	1003	640	553	674	696	1342	2014	1534	1139
20:00-21:00	1155	1593	1410	978	628	480	769	883	1497	2146	1584	1219
21:00-22:00	1362	1626	1444	929	594	508	926	820	1297	1939	1422	1119
22:00-23:00	1335	1554	1431	895	515	536	1088	864	1249	1810	1415	1154
23:00-24:00	1388	1678	1557	812	461	875	1543	1250	1483	1909	1616	1389
Average RTC	1219	1510	1282	671	271	601	1124	1070	1448	1875	1346	1126
Average Deficit Only Hours' Qtm.(MW)	1219	1510	1282	671	412	601	1124	1070	1448	1875	1346	1126
Average Deficit Only Hours' Qtm.(MUs)	877	1124	923	499	230	433	836	770	1077	1395	904	837
No. of Hours (Deficit)	24	24	24	24	18	24	24	24	24	24	24	24
Average Morning Peak Hours Deficits (MW)	-	-	-	-	-	-	766	1049	1539	1749	1272	960
Average Evening Peak Hours Deficits (MW)	1228	1582	1397	943	603	573	844	771	1313	1939	1463	1155
Average Peak Hours' Deficits (MW)	1228	1582	1397	943	603	573	805	910	1426	1844	1367	1058
Consolidated Peak Hours' Deficits (MW)	1145											
Average 24 Hours' Only Deficits (MW)	1140											
Total Deficit (MUs)	9906											

Surplus (-ve); Deficit (+ve)

Table 59: FY 2031-32 Surplus/Deficit Scenario (Optimized Output with firm power arrangement along with Tentative Banking)

FY	FY 2031-32 (with firm power arrangement of 1200 MW 600 MW + 600 MW in Long Term)											
Estimated Surplus/Deficit	Apr-31	May-31	Jun-31	Jul-31	Aug-31	Sep-31	Oct-31	Nov-31	Dec-31	Jan-32	Feb-32	Mar-32
Proposed Medium Term (MW)	0	0	0	0	0	0	0	0	0	0	0	0
Proposed Long Term (MW)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Tentative Banking (MW)	150	450	200	-300	-650	-500	-200	-300	200	700	300	-50
00:00-01:00	32	-69	60	-162	-187	247	566	350	35	-137	37	248
01:00-02:00	67	-60	43	-150	-182	221	536	326	-6	-199	10	236
02:00-03:00	68	-141	164	-143	-154	195	485	309	-19	-231	6	233
03:00-04:00	80	-146	93	-217	-216	169	462	299	5	-232	3	310
04:00-05:00	212	-37	48	-172	-211	11	318	215	-96	-335	-127	136
05:00-06:00	314	47	-63	-190	-199	-6	308	333	133	-157	75	212
06:00-07:00	18	-20	-157	-251	-241	-130	-101	248	217	-29	138	151
07:00-08:00	-386	-227	-331	-407	-519	-336	-357	41	101	-173	-253	-250
08:00-09:00	-313	-341	-450	-499	-649	-512	-245	159	99	-251	-569	-469
09:00-10:00	-437	-532	-531	-563	-649	-505	-265	102	101	-71	-519	-415
10:00-11:00	-390	-513	-448	-552	-714	-312	-87	139	203	281	-315	-278
11:00-12:00	-448	-502	-472	-634	-817	-505	-169	0	66	279	-416	-341
12:00-13:00	-520	-462	-469	-602	-690	-515	-233	-95	-107	27	-556	-425
13:00-14:00	-516	-320	-391	-496	-691	-469	-78	18	-40	-48	-550	-447
14:00-15:00	-342	-88	-176	-322	-405	-112	170	278	144	29	-380	-210
15:00-16:00	-146	117	21	-114	-187	172	514	558	301	226	-174	4
16:00-17:00	21	121	60	-109	-148	183	497	524	219	256	19	140
17:00-18:00	109	134	28	-40	-20	289	639	471	201	100	-15	316
18:00-19:00	-77	-119	-94	7	87	88	8	-214	-285	-242	-188	-7
19:00-20:00	-337	-45	-7	103	90	-147	-326	-204	-58	114	34	-11
20:00-21:00	-195	-57	10	78	78	-220	-231	-17	97	246	84	69
21:00-22:00	12	-24	44	29	44	-192	-74	-80	-103	39	-78	-31
22:00-23:00	-15	-96	31	-5	-35	-164	88	-36	-151	-90	-85	4
23:00-24:00	38	28	157	-88	-89	175	543	350	83	9	116	239
Average RTC	-131	-140	-118	-229	-279	-99	124	170	48	-25	-154	-24
Average Deficit (MW)	88	90	63	55	74	175	395	262	134	146	52	177
Average Deficit (MUs)	29	14	23	7	9	53	159	142	62	50	15	71
No. of Hours (Deficit)	11	5	12	4	4	10	13	18	15	11	10	13
Average Morning Peak Hours Deficits (MW)	-	-	-	-	-	-	0	149	139	0	138	151
Average Evening Peak Hours Deficits (MW)	12	0	28	55	74	88	8	0	97	133	59	69
Average Peak Hours' Deficits (MW)	12	0	28	55	74	88	4	75	118	67	99	110
Consolidated Peak Hours' Deficits (MW)	61											
Average 24 Hours' Deficits (MW)	143											
Total Deficit (MUs)	633											

Surplus (-ve); Deficit (+ve)

Table 60: FY 2032-33 Surplus/Deficit Scenario (BAU/without firm power arrangement)

FY	FY 2032-33(without firm power arrangement)											
Estimated Surplus/Deficit	Apr-32	May-32	Jun-32	Jul-32	Aug-32	Sep-32	Oct-32	Nov-32	Dec-32	Jan-33	Feb-33	Mar-33
00:00-01:00	1495	1727	1622	876	494	1074	1679	1340	1530	1868	1634	1494
01:00-02:00	1527	1733	1601	884	496	1044	1646	1314	1487	1803	1605	1480
02:00-03:00	1528	1647	1719	887	521	1015	1593	1296	1473	1770	1602	1477
03:00-04:00	1540	1641	1645	810	456	987	1569	1287	1498	1770	1598	1558
04:00-05:00	1675	1751	1596	854	461	831	1429	1209	1404	1673	1474	1387
05:00-06:00	1789	1840	1486	841	477	819	1429	1341	1651	1867	1693	1476
06:00-07:00	1498	1773	1392	783	440	702	1031	1278	1762	2021	1784	1437
07:00-08:00	1089	1562	1215	626	161	494	770	1073	1655	1896	1400	1037
08:00-09:00	1161	1449	1099	537	33	318	880	1185	1650	1816	1080	816
09:00-10:00	1035	1258	1020	475	34	328	858	1122	1642	1985	1117	863
10:00-11:00	1078	1277	1105	485	-32	520	1031	1151	1733	2331	1310	992
11:00-12:00	1017	1289	1082	403	-135	326	948	1007	1587	2325	1201	923
12:00-13:00	941	1329	1086	435	-9	312	881	906	1407	2061	1053	832
13:00-14:00	944	1476	1167	543	-8	361	1038	1017	1469	1980	1054	807
14:00-15:00	1122	1715	1387	722	285	724	1291	1282	1657	2057	1227	1047
15:00-16:00	1322	1924	1588	934	505	1011	1642	1569	1822	2260	1436	1266
16:00-17:00	1495	1927	1627	938	542	1022	1628	1543	1749	2298	1638	1409
17:00-18:00	1587	1937	1589	1003	669	1128	1779	1504	1748	2157	1614	1590
18:00-19:00	1407	1684	1465	1050	776	934	1152	815	1259	1819	1453	1277
19:00-20:00	1150	1767	1558	1155	786	696	809	814	1477	2167	1669	1268
20:00-21:00	1289	1756	1577	1130	773	620	899	995	1624	2299	1711	1341
21:00-22:00	1490	1786	1611	1079	736	645	1051	925	1413	2078	1539	1233
22:00-23:00	1457	1710	1598	1043	655	670	1209	963	1355	1935	1523	1260
23:00-24:00	1505	1830	1722	955	597	1005	1659	1344	1583	2022	1717	1490
Average RTC	1339	1658	1440	810	405	733	1246	1178	1568	2011	1464	1240
Average Deficit Only Hours' Qtm.(MW)	1339	1658	1440	810	495	733	1246	1178	1568	2011	1464	1240
Average Deficit Only Hours' Qtm.(MUs)	964	1233	1037	603	307	528	927	849	1167	1496	984	923
No. of Hours (Deficit)	24	24	24	24	20	24	24	24	24	24	24	24
Average Morning Peak Hours Deficits (MW)	-	-	-	-	-	-	894	1179	1689	1911	1421	1097
Average Evening Peak Hours Deficits (MW)	1358	1740	1562	1092	745	713	978	887	1443	2091	1593	1280
Average Peak Hours' Deficits (MW)	1358	1740	1562	1092	745	713	936	1033	1566	2001	1507	1188
Consolidated Peak Hours' Deficits (MW)	1287											
Average 24 Hours' Only Deficits (MW)	1265											
Total Deficit (MUs)	11016											

Surplus (-ve); Deficit (+ve)

Table 51: FY 2032-33 Surplus/Deficit Scenario (Optimized Output with firm power arrangement along with Tentative Banking)

FY	FY 2032-33 (with firm power arrangement of 1200 MW in Long Term)											
Estimated Surplus/Deficit	Apr-32	May-32	Jun-32	Jul-32	Aug-32	Sep-32	Oct-32	Nov-32	Dec-32	Jan-33	Feb-33	Mar-33
Proposed Medium Term (MW)	0	0	0	0	0	0	0	0	0	0	0	0
Proposed Long Term (MW)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Tentative Banking (MW)	100	400	150	-200	-600	-500	-200	-300	250	700	250	-50
00:00-01:00	195	127	272	-124	-106	374	679	440	80	-32	184	344
01:00-02:00	227	133	251	-116	-104	344	646	414	37	-97	155	330
02:00-03:00	228	47	369	-113	-79	315	593	396	23	-130	152	327
03:00-04:00	240	41	295	-190	-144	287	569	387	48	-130	148	408
04:00-05:00	375	151	246	-146	-139	131	429	309	-46	-227	24	237
05:00-06:00	489	240	136	-159	-123	119	429	441	201	-33	243	326
06:00-07:00	198	173	42	-217	-160	2	31	378	312	121	334	287
07:00-08:00	-211	-38	-135	-374	-439	-206	-230	173	205	-4	-50	-113
08:00-09:00	-139	-151	-251	-463	-567	-382	-120	285	200	-84	-370	-334
09:00-10:00	-265	-342	-330	-525	-566	-372	-142	222	192	85	-333	-287
10:00-11:00	-222	-323	-245	-515	-632	-180	31	251	283	431	-140	-158
11:00-12:00	-283	-311	-268	-597	-735	-374	-52	107	137	425	-249	-227
12:00-13:00	-359	-271	-264	-565	-609	-388	-119	6	-43	161	-397	-318
13:00-14:00	-356	-124	-183	-457	-608	-339	38	117	19	80	-396	-343
14:00-15:00	-178	115	37	-278	-315	24	291	382	207	157	-223	-103
15:00-16:00	22	324	238	-66	-95	311	642	669	372	360	-14	116
16:00-17:00	195	327	277	-62	-58	322	628	643	299	398	188	259
17:00-18:00	287	337	239	3	69	428	779	604	298	257	164	440
18:00-19:00	107	84	115	50	176	234	152	-85	-191	-81	3	127
19:00-20:00	-150	167	208	155	186	-4	-191	-86	27	267	219	118
20:00-21:00	-11	156	227	130	173	-80	-101	95	174	399	261	191
21:00-22:00	190	186	261	79	136	-55	51	25	-37	178	89	83
22:00-23:00	157	110	248	43	55	-30	209	63	-95	35	73	110
23:00-24:00	205	230	372	-45	-3	305	659	444	133	122	267	340
Average RTC	39	58	90	-190	-195	33	246	278	118	111	14	90
Average Deficit (MW)	222	173	225	77	133	246	403	312	171	232	167	253
Average Deficit (MUs)	93	91	115	14	25	96	213	206	101	108	70	125
No. of Hours (Deficit)	14	17	17	6	6	13	17	22	19	15	15	16
Average Morning Peak Hours Deficits (MW)	-	-	-	-	-	-	31	279	239	121	334	287
Average Evening Peak Hours Deficits (MW)	151	140	212	92	145	234	102	60	101	282	143	130
Average Peak Hours' Deficits (MW)	151	140	212	92	145	234	67	170	170	201	238	208
Consolidated Peak Hours' Deficits (MW)	169											
Average 24 Hours' Deficits (MW)	218											
Total Deficit (MUs)	1257											

Surplus (-ve); Deficit (+ve)

Table 52: FY 2033-34 Surplus/Deficit Scenario (BAU/without firm power arrangement)

FY	FY 2033-34(without firm power arrangement)											
Estimated Surplus/Deficit	Apr-33	May-33	Jun-33	Jul-33	Aug-33	Sep-33	Oct-33	Nov-33	Dec-33	Jan-34	Feb-34	Mar-34
00:00-01:00	1614	1880	1792	1021	632	1206	1798	1435	1630	1979	1736	1594
01:00-02:00	1643	1883	1766	1025	629	1172	1762	1407	1584	1911	1705	1579
02:00-03:00	1642	1792	1880	1023	651	1141	1706	1387	1569	1876	1701	1576
03:00-04:00	1655	1784	1804	941	583	1111	1681	1379	1595	1876	1699	1660
04:00-05:00	1793	1895	1750	986	588	955	1545	1308	1508	1785	1580	1493
05:00-06:00	1920	1990	1641	977	610	950	1555	1454	1776	1996	1816	1596
06:00-07:00	1633	1923	1547	922	577	839	1169	1415	1914	2178	1936	1579
07:00-08:00	1220	1706	1369	766	296	629	903	1212	1816	2072	1561	1181
08:00-09:00	1291	1596	1255	680	171	455	1009	1318	1807	1990	1235	957
09:00-10:00	1163	1405	1179	619	173	467	986	1248	1789	2149	1260	997
10:00-11:00	1201	1423	1265	629	106	657	1155	1269	1868	2489	1440	1117
11:00-12:00	1138	1437	1244	547	3	462	1070	1119	1715	2477	1323	1042
12:00-13:00	1056	1476	1248	577	128	446	1000	1011	1527	2201	1168	945
13:00-14:00	1058	1629	1333	689	131	497	1158	1121	1582	2114	1163	915
14:00-15:00	1241	1875	1558	873	431	867	1419	1391	1775	2192	1338	1158
15:00-16:00	1446	2088	1762	1089	652	1155	1776	1684	1948	2400	1551	1382
16:00-17:00	1624	2090	1802	1091	688	1167	1765	1667	1885	2446	1762	1533
17:00-18:00	1720	2096	1758	1153	814	1272	1926	1643	1903	2322	1750	1720
18:00-19:00	1547	1843	1630	1200	922	1087	1303	950	1410	1987	1601	1417
19:00-20:00	1293	1936	1730	1314	938	845	951	937	1618	2327	1809	1403
20:00-21:00	1429	1926	1752	1289	925	767	1035	1112	1757	2459	1843	1469
21:00-22:00	1623	1952	1786	1236	885	788	1182	1035	1534	2224	1661	1351
22:00-23:00	1585	1873	1773	1199	802	810	1336	1067	1466	2065	1635	1370
23:00-24:00	1627	1989	1895	1104	740	1140	1781	1443	1687	2141	1823	1594
Average RTC	1465	1812	1605	956	545	870	1374	1292	1694	2152	1587	1360
Average Deficit Only Hours' Qtm.(MW)	1465	1812	1605	956	545	870	1374	1292	1694	2152	1587	1360
Average Deficit Only Hours' Qtm.(MUs)	1055	1348	1156	711	405	627	1022	930	1261	1601	1067	1012
No. of Hours (Deficit)	24	24	24	24	24	24	24	24	24	24	24	24
Average Morning Peak Hours Deficits (MW)	-	-	-	-	-	-	1027	1315	1846	2080	1577	1239
Average Evening Peak Hours Deficits (MW)	1495	1906	1734	1247	894	859	1118	1008	1580	2249	1729	1410
Average Peak Hours' Deficits (MW)	1495	1906	1734	1247	894	859	1073	1162	1713	2165	1653	1325
Consolidated Peak Hours' Deficits (MW)	1435											
Average 24 Hours' Only Deficits (MW)	1393											
Total Deficit (MUs)	12194											

Surplus (-ve); Deficit (+ve)

Table 53: FY 2033-34 Surplus/Deficit Scenario (Optimized Output with firm power arrangement along with Tentative Banking)

FY	FY 2033-34 (with firm power arrangement of 1200 MW in Long Term)											
Estimated Surplus/Deficit	Apr-33	May-33	Jun-33	Jul-33	Aug-33	Sep-33	Oct-33	Nov-33	Dec-33	Jan-34	Feb-34	Mar-34
Proposed Medium Term (MW)	0	0	0	0	0	0	0	0	0	0	0	0
Proposed Long Term (MW)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Tentative Banking (MW)	100	400	150	-200	-600	-500	-200	-300	250	700	250	-50
00:00-01:00	314	280	442	21	32	506	798	535	180	79	286	444
01:00-02:00	343	283	416	25	29	472	762	507	134	11	255	429
02:00-03:00	342	192	530	23	51	441	706	487	119	-24	251	426
03:00-04:00	355	184	454	-59	-17	411	681	479	145	-24	249	510
04:00-05:00	493	295	400	-14	-12	255	545	408	58	-115	130	343
05:00-06:00	620	390	291	-23	10	250	555	554	326	96	366	446
06:00-07:00	333	323	197	-78	-23	139	169	515	464	278	486	429
07:00-08:00	-80	106	19	-234	-304	-71	-97	312	366	172	111	31
08:00-09:00	-9	-4	-95	-320	-429	-245	9	418	357	90	-215	-193
09:00-10:00	-137	-195	-171	-381	-427	-233	-14	348	339	249	-190	-153
10:00-11:00	-99	-177	-85	-371	-494	-43	155	369	418	589	-10	-33
11:00-12:00	-162	-163	-106	-453	-597	-238	70	219	265	577	-127	-108
12:00-13:00	-244	-124	-102	-423	-472	-254	0	111	77	301	-282	-205
13:00-14:00	-242	29	-17	-311	-469	-203	158	221	132	214	-287	-235
14:00-15:00	-59	275	208	-127	-169	167	419	491	325	292	-112	8
15:00-16:00	146	488	412	89	52	455	776	784	498	500	101	232
16:00-17:00	324	490	452	91	88	467	765	767	435	546	312	383
17:00-18:00	420	496	408	153	214	572	926	743	453	422	300	570
18:00-19:00	247	243	280	200	322	387	303	50	-40	87	151	267
19:00-20:00	-7	336	380	314	338	145	-49	37	168	427	359	253
20:00-21:00	129	326	402	289	325	67	35	212	307	559	393	319
21:00-22:00	323	352	436	236	285	88	182	135	84	324	211	201
22:00-23:00	285	273	423	199	202	110	336	167	16	165	185	220
23:00-24:00	327	389	545	104	140	440	781	543	237	241	373	444
Average RTC	165	212	255	-44	-55	170	374	392	244	252	137	210
Average Deficit (MW)	333	303	372	145	161	316	457	392	257	296	266	331
Average Deficit (MUs)	150	178	201	54	65	161	283	282	183	193	126	185
No. of Hours (Deficit)	15	19	18	12	13	17	20	24	23	21	17	18
Average Morning Peak Hours Deficits (MW)	-	-	-	-	-	-	89	415	396	180	298	230
Average Evening Peak Hours Deficits (MW)	246	306	384	247	294	159	173	108	186	349	279	260
Average Peak Hours' Deficits (MW)	246	306	384	247	294	159	131	262	291	265	288	245
Consolidated Peak Hours' Deficits (MW)	260											
Average 24 Hours' Deficits (MW)	302											
Total Deficit (MUs)	2061											

Surplus (-ve); Deficit (+ve)

Table 54: FY 2034-35 Surplus/Deficit Scenario (BAU/without firm power arrangement)

FY	FY 2034-35(without firm power arrangement)											
Estimated Surplus/Deficit	Apr-34	May-34	Jun-34	Jul-34	Aug-34	Sep-34	Oct-34	Nov-34	Dec-34	Jan-35	Feb-35	Mar-35
00:00-01:00	1737	2040	1969	1173	775	1344	1921	1533	1734	2094	1842	1698
01:00-02:00	1764	2040	1939	1171	768	1306	1882	1503	1686	2023	1810	1682
02:00-03:00	1761	1943	2049	1166	787	1272	1824	1483	1670	1987	1805	1679
03:00-04:00	1775	1934	1969	1079	715	1240	1799	1475	1697	1987	1803	1768
04:00-05:00	1916	2045	1912	1124	721	1085	1665	1410	1617	1902	1690	1603
05:00-06:00	2056	2146	1803	1120	748	1086	1687	1572	1905	2131	1945	1721
06:00-07:00	1775	2079	1710	1068	720	983	1314	1558	2073	2341	2094	1734
07:00-08:00	1356	1858	1529	911	437	770	1042	1356	1984	2256	1728	1372
08:00-09:00	1427	1749	1417	828	315	598	1145	1456	1971	2173	1397	1177
09:00-10:00	1296	1558	1344	770	318	612	1120	1379	1942	2319	1409	1246
10:00-11:00	1330	1575	1432	780	250	801	1284	1391	2010	2654	1577	1392
11:00-12:00	1264	1591	1412	697	148	605	1198	1236	1848	2635	1450	1323
12:00-13:00	1177	1631	1417	726	271	585	1124	1121	1651	2348	1287	1218
13:00-14:00	1177	1788	1506	841	277	639	1284	1229	1701	2254	1276	1177
14:00-15:00	1366	2042	1737	1030	584	1015	1552	1505	1898	2333	1455	1410
15:00-16:00	1576	2259	1944	1250	807	1307	1915	1804	2080	2546	1671	1610
16:00-17:00	1759	2260	1985	1252	842	1319	1909	1797	2027	2601	1891	1725
17:00-18:00	1860	2262	1934	1309	965	1424	2080	1789	2064	2495	1891	1881
18:00-19:00	1693	2009	1804	1356	1074	1247	1460	1091	1567	2162	1756	1571
19:00-20:00	1443	2112	1910	1480	1098	1001	1099	1065	1765	2494	1956	1544
20:00-21:00	1575	2103	1934	1455	1083	920	1178	1235	1896	2626	1982	1603
21:00-22:00	1762	2127	1969	1399	1041	937	1319	1149	1660	2377	1789	1475
22:00-23:00	1719	2043	1955	1361	955	956	1468	1175	1582	2201	1753	1485
23:00-24:00	1755	2155	2076	1260	889	1281	1908	1547	1796	2265	1933	1704
Average RTC	1597	1973	1777	1109	691	1014	1507	1411	1826	2300	1716	1533
Average Deficit Only Hours' Qtm.(MW)	1597	1973	1777	1109	691	1014	1507	1411	1826	2300	1716	1533
Average Deficit Only Hours' Qtm.(MUs)	1150	1468	1280	825	514	730	1121	1016	1358	1711	1153	1141
No. of Hours (Deficit)	24	24	24	24	24	24	24	24	24	24	24	24
Average Morning Peak Hours Deficits (MW)	-	-	-	-	-	-	1167	1457	2009	2257	1740	1428
Average Evening Peak Hours Deficits (MW)	1638	2079	1914	1410	1050	1012	1264	1135	1722	2415	1871	1548
Average Peak Hours' Deficits (MW)	1638	2079	1914	1410	1050	1012	1216	1296	1866	2336	1805	1488
Consolidated Peak Hours' Deficits (MW)	1593											
Average 24 Hours' Only Deficits (MW)	1538											
Total Deficit (MUs)	13467											

Surplus (-ve); Deficit (+ve)

Table 55: FY 2034-35 Surplus/Deficit Scenario (Optimized Output with firm power arrangement along with Tentative Banking)

FY	FY 2034-35 (with firm power arrangement of 1200 MW in Long Term)											
Estimated Surplus/Deficit	Apr-34	May-34	Jun-34	Jul-34	Aug-34	Sep-34	Oct-34	Nov-34	Dec-34	Jan-35	Feb-35	Mar-35
Proposed Medium Term (MW)	0	0	0	0	0	0	0	0	0	0	0	0
Proposed Long Term (MW)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Tentative Banking (MW)	100	400	150	-200	-600	-500	-200	-300	250	700	250	-50
00:00-01:00	437	440	619	173	175	644	921	633	284	194	392	548
01:00-02:00	464	440	589	171	168	606	882	603	236	123	360	532
02:00-03:00	461	343	699	166	187	572	824	583	220	87	355	529
03:00-04:00	475	334	619	79	115	540	799	575	247	87	353	618
04:00-05:00	616	445	562	124	121	385	665	510	167	2	240	453
05:00-06:00	756	546	453	120	148	386	687	672	455	231	495	571
06:00-07:00	475	479	360	68	120	283	314	658	623	441	644	584
07:00-08:00	56	258	179	-89	-163	70	42	456	534	356	278	222
08:00-09:00	127	149	67	-172	-285	-102	145	556	521	273	-53	27
09:00-10:00	-4	-42	-6	-230	-282	-88	120	479	492	419	-41	96
10:00-11:00	30	-25	82	-220	-350	101	284	491	560	754	127	242
11:00-12:00	-36	-9	62	-303	-452	-95	198	336	398	735	0	173
12:00-13:00	-123	31	67	-274	-329	-115	124	221	201	448	-163	68
13:00-14:00	-123	188	156	-159	-323	-61	284	329	251	354	-174	27
14:00-15:00	66	442	387	30	-16	315	552	605	448	433	5	260
15:00-16:00	276	659	594	250	207	607	915	904	630	646	221	460
16:00-17:00	459	660	635	252	242	619	909	897	577	701	441	575
17:00-18:00	560	662	584	309	365	724	1080	889	614	595	441	731
18:00-19:00	393	409	454	356	474	547	460	191	117	262	306	421
19:00-20:00	143	512	560	480	498	301	99	165	315	594	506	394
20:00-21:00	275	503	584	455	483	220	178	335	446	726	532	453
21:00-22:00	462	527	619	399	441	237	319	249	210	477	339	325
22:00-23:00	419	443	605	361	355	256	468	275	132	301	303	335
23:00-24:00	455	555	726	260	289	581	908	647	346	365	483	554
Average RTC	297	373	427	109	91	314	507	511	376	400	266	383
Average Deficit (MW)	370	430	446	238	274	421	507	511	376	400	341	383
Average Deficit (MUs)	222	280	308	126	136	240	377	368	280	298	191	285
No. of Hours (Deficit)	20	21	23	17	16	19	24	24	24	24	20	24
Average Morning Peak Hours Deficits (MW)	-	-	-	-	-	-	167	557	559	357	461	278
Average Evening Peak Hours Deficits (MW)	338	479	564	410	450	312	264	235	272	515	421	398
Average Peak Hours' Deficits (MW)	338	479	564	410	450	312	216	396	416	436	441	338
Consolidated Peak Hours' Deficits (MW)	400											
Average 24 Hours' Deficits (MW)	392											
Total Deficit (MUs)	3110											

Surplus (-ve); Deficit (+ve)

Appendix: Section 2 - Month wise historical demand and supply

Table 56: FY 19 - Energy Requirement (Average Demand) & Peak Demand Details

FY 19: Energy Requirement (Average Demand) & Peak Demand Details									
Months	Energy Requirement (MU)	Energy Supplied (MU)	Energy Not Supplied (MU)	% Average Deficit	Months	Peak Demand (MW)	Peak Met (MW)	Peak Not Met (MW)	% Peak Deficit
Apr-18	1106	1103	2.00	0.20	Apr-18	1953	1953	0.00	0.00
May-18	1263	1232	32.00	2.50	May-18	2097	2097	0.00	0.00
Jun-18	1301	1291	10.00	0.80	Jun-18	2134	2134	0.00	0.00
Jul-18	1301	1287	14.00	1.10	Jul-18	2143	2143	0.00	0.00
Aug-18	1177	1167	11.00	0.90	Aug-18	2096	2096	0.00	0.00
Sep-18	1162	1149	13.00	1.10	Sep-18	1996	1996	0.00	0.00
Oct-18	1071	1069	3.00	0.30	Oct-18	1943	1943	0.00	0.00
Nov-18	1007	1006	2.00	0.20	Nov-18	1897	1897	0.00	0.00
Dec-18	1159	1156	2.00	0.20	Dec-18	2158	2158	0.00	0.00
Jan-19	1192	1189	3.00	0.20	Jan-19	2216	2216	0.00	0.00
Feb-19	1038	1037	1.00	0.10	Feb-19	2182	2182	0.00	0.00
Mar-19	1067	1067	0.00	0.00	Mar-19	2002	2002	0.00	0.00
Total MU	13844	13753	93	8	Max MW	2216	2216	0	0

Table 57: FY 20 - Energy Requirement (Average Demand) & Peak Demand Details

FY 20: Energy Requirement (Average Demand) & Peak Demand Details									
Months	Energy Requirement (MU)	Energy Supplied (MU)	Energy Not Supplied (MU)	% Average Deficit	Months	Peak Demand (MW)	Peak Met (MW)	Peak Not Met (MW)	% Peak Deficit
Apr-19	1120	1120	0.0	0.0	Apr-19	1922	1922	0.0	0.0
May-19	1406	1322	83.0	5.9	May-19	2155	2155	0.0	0.0
Jun-19	1441	1441	0.0	0.0	Jun-19	2164	2164	0.0	0.0
Jul-19	1416	1416	0.0	0.0	Jul-19	2158	2158	0.0	0.0
Aug-19	1263	1254	9.0	0.7	Aug-19	2077	2077	0.0	0.0
Sep-19	1310	1310	0.0	0.0	Sep-19	2048	2048	0.0	0.0
Oct-19	1103	1103	0.0	0.0	Oct-19	1797	1797	0.0	0.0
Nov-19	1041	1041	0.0	0.0	Nov-19	1818	1818	0.0	0.0
Dec-19	1168	1166	2.0	0.2	Dec-19	2233	2233	0.0	0.0
Jan-20	1244	1243	1.0	0.0	Jan-20	2208	2208	0.0	0.0
Feb-20	1091	1091	0.0	0.0	Feb-20	2233	2233	0.0	0.0
Mar-20	869	869	0.0	0.0	Mar-20	1892	1892	0.0	0.0
Total MU	14472	14376	95	7	Max MW	2233	2233	0	0

Table 58: FY 21 - Energy Requirement (Average Demand) & Peak Demand Details

FY 21: Energy Requirement (Average Demand) & Peak Demand Details									
Months	Energy Requirement (MU)	Energy Supplied (MU)	Energy Not Supplied (MU)	% Average Deficit	Months	Peak Demand (MW)	Peak Met (MW)	Peak Not Met (MW)	% Peak Deficit
Apr-20	674	674	0.0	0.0	Apr-20	1233	1233	0.0	0.0
May-20	974	974	0.0	0.0	May-20	1648	1648	0.0	0.0
Jun-20	1252	1252	0.0	0.0	Jun-20	1942	1942	0.0	0.0
Jul-20	1350	1350	0.0	0.0	Jul-20	2030	2030	0.0	0.0
Aug-20	1324	1324	0.0	0.0	Aug-20	1997	1997	0.0	0.0
Sep-20	1347	1347	0.0	0.0	Sep-20	2076	2076	0.0	0.0
Oct-20	1133	1132	0.0	0.0	Oct-20	1917	1917	0.0	0.0
Nov-20	1040	1040	0.0	0.0	Nov-20	1988	1988	0.0	0.0
Dec-20	1216	1216	0.0	0.0	Dec-20	2287	2287	0.0	0.0
Jan-21	1263	1260	3.0	0.2	Jan-21	2372	2372	0.0	0.0
Feb-21	1100	1099	1.0	0.1	Feb-21	2340	2340	0.0	0.0

FY 21: Energy Requirement (Average Demand) & Peak Demand Details									
Months	Energy Requirement (MU)	Energy Supplied (MU)	Energy Not Supplied (MU)	% Average Deficit	Months	Peak Demand (MW)	Peak Met (MW)	Peak Not Met (MW)	% Peak Deficit
Mar-21	1154	11504	4.0	0.3	Mar-21	2068	2068	0.0	0.0
Total MU	13827	24172	8	1	Max MW	2372	2372	0	0

Table 59: FY 19 - Energy Requirement (Average Demand) & Peak Demand Details

FY 22: Energy Requirement (Average Demand) & Peak Demand Details									
Months	Energy Requirement (MU)	Energy Supplied (MU)	Energy Not Supplied (MU)	% Average Deficit	Months	Peak Demand (MW)	Peak Met (MW)	Peak Not Met (MW)	% Peak Deficit
Apr-21	1157	1153	4.0	0.3	Apr-21	1917	1917	0.0	0.0
May-21	1075	1075	0.0	0.0	May-21	1798	1798	0.0	0.0
Jun-21	1311	1309	1.0	0.1	Jun-21	2189	2189	0.0	0.0
Jul-21	1594	1580	14.0	0.9	Jul-21	2269	2269	0.0	0.0
Aug-21	1446	1422	24.0	0.7	Aug-21	2269	2269	0.0	0.0
Sep-21	1371	1367	4.0	0.3	Sep-21	2074	2074	0.0	0.0
Oct-21	1342	1328	14.0	1.1	Oct-21	2066	2066	0.0	0.0
Nov-21	1054	1054	1.0	0.1	Nov-21	1967	1967	0.0	0.0
Dec-21	1284	1284	1.0	0.0	Dec-21	2318	2318	0.0	0.0
Jan-22	1392	1389	2.0	0.2	Jan-22	2468	2468	0.0	0.0
Feb-22	1187	1187	0.0	0.0	Feb-22	2379	2379	0.0	0.0
Mar-22	1307	1278	29.0	2.2	Mar-22	2162	2162	0.0	0.0
Total MU	15520	15426	94	6	Max MW	2468	2468	0	0

Table 60: FY 23 - Energy Requirement (Average Demand) & Peak Demand Details

FY 23: Energy Requirement (Average Demand) & Peak Demand Details									
Months	Energy Requirement (MU)	Energy Supplied (MU)	Energy Not Supplied (MU)	% Average Deficit	Months	Peak Demand (MW)	Peak Met (MW)	Peak Not Met (MW)	% Peak Deficit
Apr-22	1401	1341	59.0	4.2	Apr-22	2329	2329	0.0	0.0
May-22	1460	1451	9.0	0.6	May-22	2354	2354	0.0	0.0
Jun-22	1570	1537	33.0	2.1	Jun-22	2594	2594	0.0	0.0
Jul-22	1475	1438	36.0	2.5	Jul-22	2342	2342	0.0	0.0
Aug-22	1425	1411	14.0	1.0	Aug-22	2339	2339	0.0	0.0
Sep-22	1294	1283	11.0	0.8	Sep-22	2313	2313	0.0	0.0
Oct-22	1099	1096	4.0	0.3	Oct-22	2092	2092	0.0	0.0
Nov-22	1079	1069	10.0	0.9	Nov-22	2141	2141	0.0	0.0
Dec-22	1229	1212	16.0	1.3	Dec-22	2374	2224	150.0	6.3
Jan-23	1340	1305	34.0	2.6	Jan-23	2492	2492	0.0	0.0
Feb-23	1113	1092	21.0	1.9	Feb-23	2368	2218	150.0	6.3
Mar-23	1162	1149	13.0	1.1	Mar-23	2185	2185	0.0	0.0
Total MU	15647	15384	260	19	Max MW	2594	2594	150	6

Table 61: FY 24 - Energy Requirement (Average Demand) & Peak Demand Details

FY 24: Energy Requirement (Average Demand) & Peak Demand Details									
Months	Energy Requirement (MU)	Energy Supplied (MU)	Energy Not Supplied (MU)	% Average Deficit	Months	Peak Demand (MW)	Peak Met (MW)	Peak Not Met (MW)	% Peak Deficit
Apr-23	1208	1193	15.0	1.2	Apr-23	2228	2228	0.0	0.0
May-23	1335	1331	4.0	0.3	May-23	2415	2415	0.0	0.0
Jun-23	1483	1479	4.0	0.3	Jun-23	2536	2436	100.0	3.9
Jul-23	1357	1342	15.0	1.1	Jul-23	2298	2223	75.0	3.3

FY 24: Energy Requirement (Average Demand) & Peak Demand Details									
Months	Energy Requirement (MU)	Energy Supplied (MU)	Energy Not Supplied (MU)	% Average Deficit	Months	Peak Demand (MW)	Peak Met (MW)	Peak Not Met (MW)	% Peak Deficit
Aug-23	1404	1385	19.0	1.4	Aug-23	2303	2228	75.0	3.3
Sep-23	1392	1381	11.0	0.8	Sep-23	2368	2293	75.0	3.2
Oct-23	1239	1230	9.0	0.7	Oct-23	2259	2259	0.0	0.0
Nov-23	1102	1099	3.0	0.3	Nov-23	2141	2141	0.0	0.0
Dec-23	1267	1263	4.0	0.3	Dec-23	2417	2417	0.0	0.0
Jan-24	1430	1409	21.0	1.5	Jan-24	2635	2405	230.0	8.7
Feb-24	1223	1217	6.0	0.5	Feb-24	2523	2328	195.0	7.7
Mar-24	1203	1202	1.0	0.1	Mar-24	2260	2260	0.0	0.0
Total MU	15643	15531	112	9	Max MW	2635	2436	230	9

Table 7: FY 25 - Energy Requirement (Average Demand) & Peak Demand Details

FY 25: Energy Requirement (Average Demand) & Peak Demand Details									
Months	Energy Requirement (MU)	Energy Supplied (MU)	Energy Not Supplied (MU)	% Average Deficit	Months	Peak Demand (MW)	Peak Met (MW)	Peak Not Met (MW)	% Peak Deficit
Apr-24	1302	1300	2.0	0.2	Apr-24	2357	2357	0.0	0.0
May-24	1663	1660	3.0	0.2	May-24	2781	2781	0.0	0.0
Jun-24	1713	1704	9.0	0.5	Jun-24	2863	2863	0.0	0.0
Jul-24	1563	1549	14.0	0.9	Jul-24	2545	2545	0.0	0.0
Aug-24	1506	1501	5.0	0.3	Aug-24	2482	2452	30.0	1.2
Sep-24	1422	1418	4.0	0.3	Sep-24	2564	2489	75.0	2.9
Oct-24	1351	1345	6.0	0.4	Oct-24	2412	2412	0.0	0.0
Nov-24	1164	1164	0.0	0.0	Nov-24	2249	2249	0.0	0.0
Dec-24	1335	1335	0.0	0.0	Dec-24	2504	2504	0.0	0.0
Jan-25*	1527	-	-	-	Jan-25*	2793	-	-	-
Feb-25*	1394	-	-	-	Feb-25*	2615	-	-	-
Mar-25*	1276	-	-	-	Mar-25*	2309	-	-	-
Total MU	17217	12976	43	3	Max MW	2863	2863	75	3

** Forecasted Figures*

Appendix: Section 3 - Details of existing contracted capacities

Table 63: Details of Existing Coal Capacities

Details of Existing Coal Capacities		
S. No.	Plant Name	UPCL Share (MW)
1	Singrauli	96
2	Unchahar-I	36
3	Unchahar-2	15
4	Unchahar-3	13
5	Unchahar-4	31
6	Dadri II	6
7	Rihand-1 STPS	39
8	Rihand-2 STPS	34
9	Rihand-3 STPS	39
10	Kahalgaon-II	28
11	Jhajjar Aravali	10
12	Tanda-II	38
13	Meja-II	23
14	Sasan	99
15	THDC Khurja	26
Total (MW)		533

Table 64: Details of Existing Atomic Capacities

Details of Existing Atomic Capacities		
S. No.	Plant Name	UPCL Share (MW)
1	NPCIL NAPP	22
2	NPCIL RAPP-II	24
Total (MW)		46

Table 85: Details of Existing Gas Capacities

Details of Existing Gas Capacities		
S. No.	Plant Name	UPCL Share (MW)
1	Anta Gas	16
2	Auraiya Gas	25
3	Dadri Gas	28
4	Internal Gas (GAMA+SEPL)	321
Total (MW)		390

Table 66: Details of Existing Sugar Capacities

Details of Existing Sugar Capacities		
S. No.	Plant Name	UPCL Share (MW)
1	RBNS Sugar Mill	19
2	Uttam Sugar Mills	20
3	Dhanashree Agro/Lakshmi Sugar Mills	13
Total		52

Table 67: Details of Existing Hydro Capacities

Details of Existing Hydro Capacities		
S. No.	Plant Name	UPCL Share (MW)
1	Salal	8
2	Tanakpur	19
3	Chamera I	19
4	Chamera II	10
5	Chamera III	9
6	Uri I	17
7	Dhauliganga	45
8	Dulhasti	16
9	Sewa II	5
10	Uri II	10
11	Parbati III	21
12	Kishnaganga	9
13	Nathpa Jhakri	28
14	Rampur Equity Power	44
15	Tehri HEP I	147
16	Koteshwar	71
17	Singrauli SHEP (HYDRO)	0
18	Koldam (Hydro)	48
19	Greenko Budhil Hydro Power Pvt Ltd	70
20	Vishnu Prayag	48
21	GVK Srinagar (Alaknanda)	40
24	Dhakrani	25
25	Dhalipur	38
26	Chibro	180
27	Khodri	90
28	Kulhal	24
29	Ramganga	198
30	Tiloth	90
31	Chilla	144
32	Khatima	41
33	Vyasi Hydro Power Project	120
34	MB-II (Dharasu)	304
35	Mohd. Pur	9
36	Pathri	20
Total (MW)		1970

Table 68: Details of Existing Hybrid Capacities

Details of Existing Hybrid Capacity		
S. No.	Plant Name	UPCL Share (MW)
1	SECI RTC Solar Gujrat	100

Table 9: Details of Existing Solar Capacities

Details of Existing Solar Capacities		
S. No.	Plant Name	UPCL Share (MW)
1	Madhav Infra	12
1	Devishi Renewal Energy	12
2	Devishi Solar Power	12
3	Eminet Solar Power	12
4	Sunworld Energy Pvt. Ltd.	12

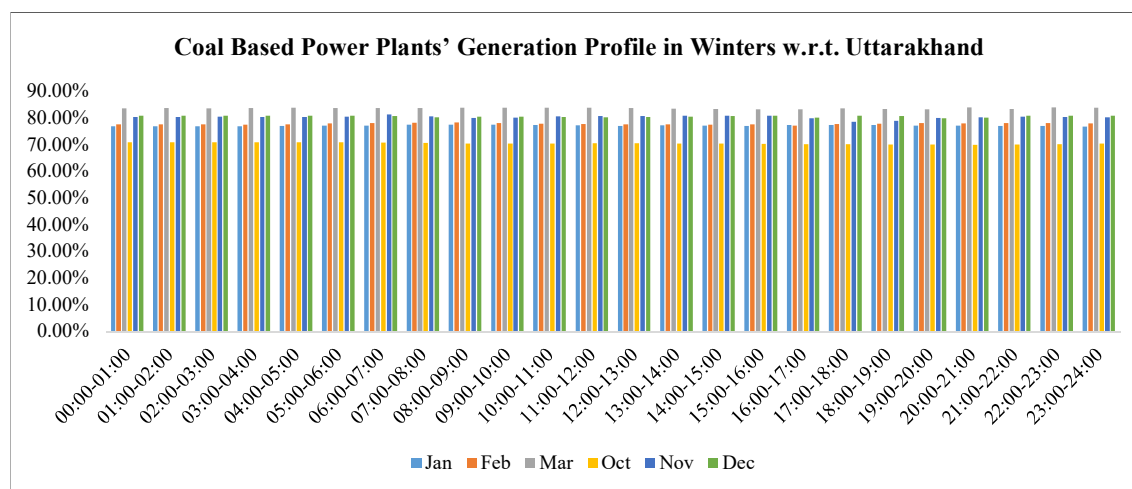
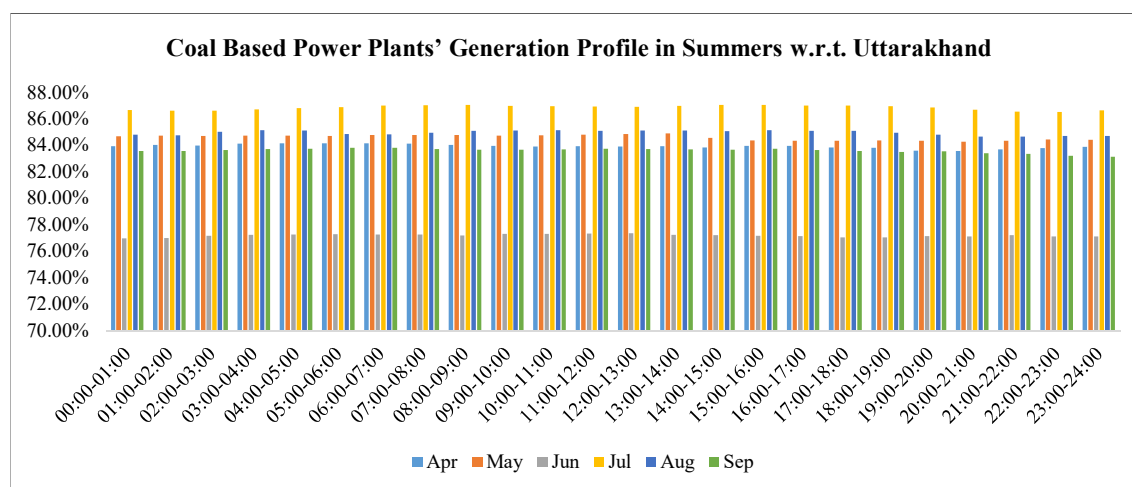
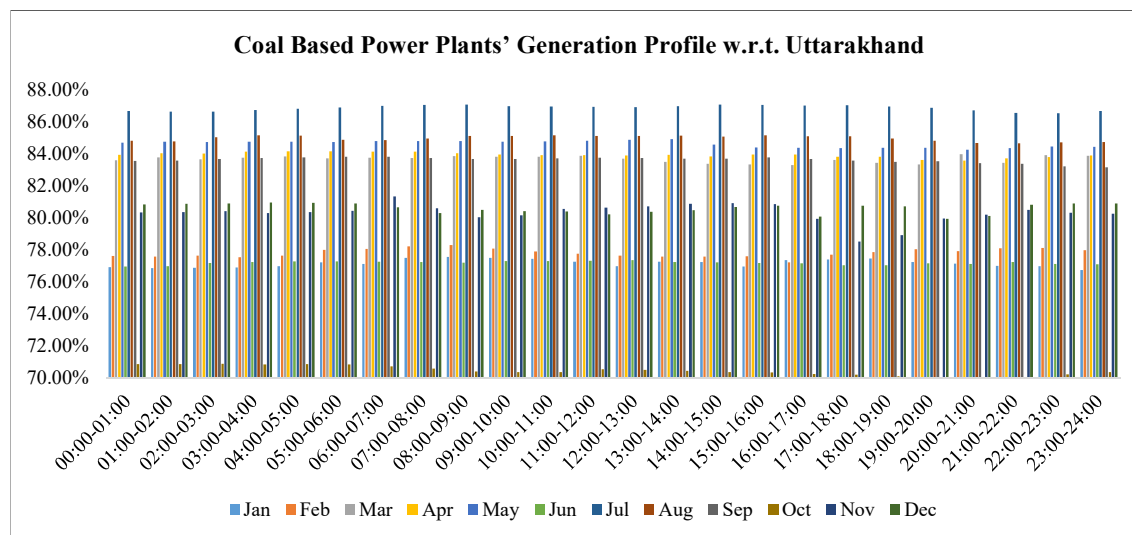
Details of Existing Solar Capacities		
S. No.	Plant Name	UPCL Share (MW)
5	Ballupur Solar Power Pvt. Ltd.	10
6	Chudiala Solar Power Project Pvt. Ltd.	10
7	Shakumbhari Solar Power Project Pvt. Ltd.	10
8	Bindookharak Solar Power Project Pvt. Ltd.	5
9	Bhagwanpur Solar Projects Pvt. Ltd.	5
10	Haridwar Solar Projects Pvt. Ltd.	10
11	Haridwar Solar Projects Pvt. Ltd.	10
12	RSVPL_FTG3 (Vanila)	97
Total		217

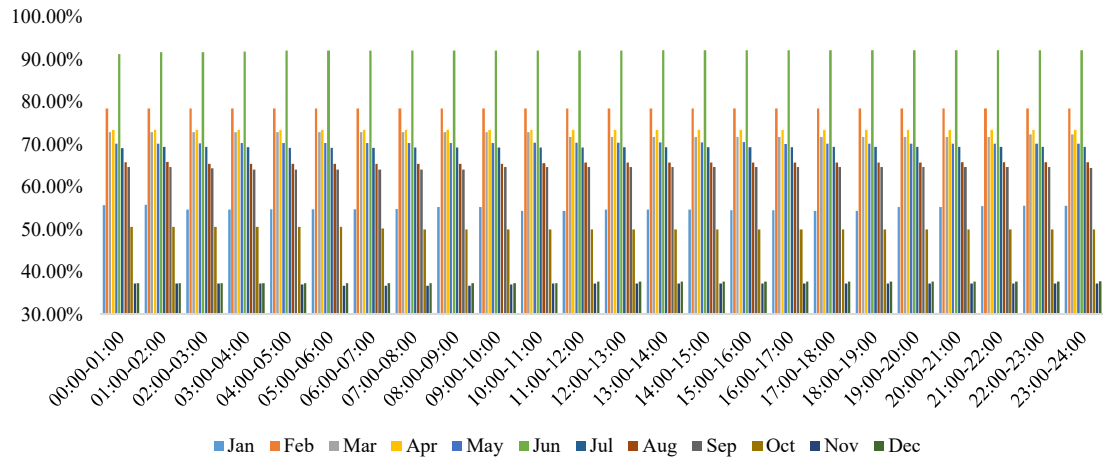
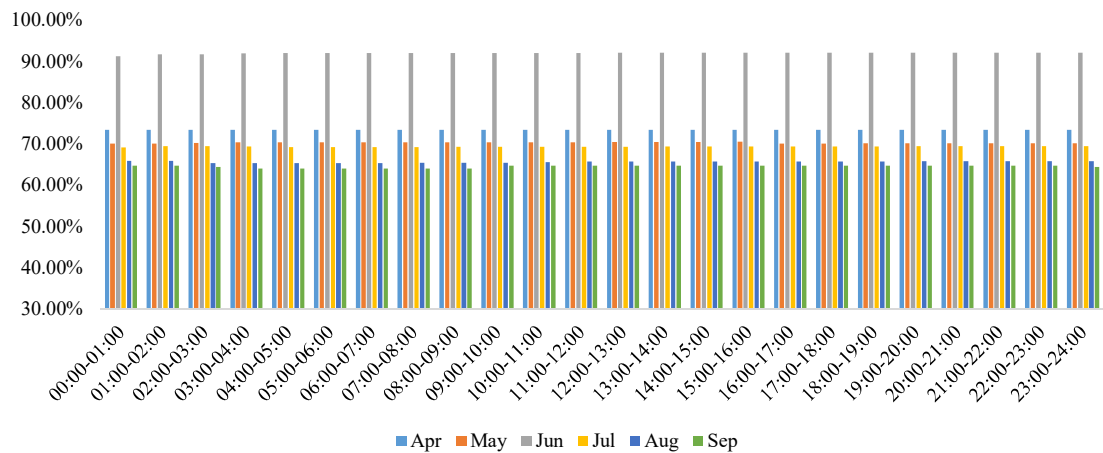
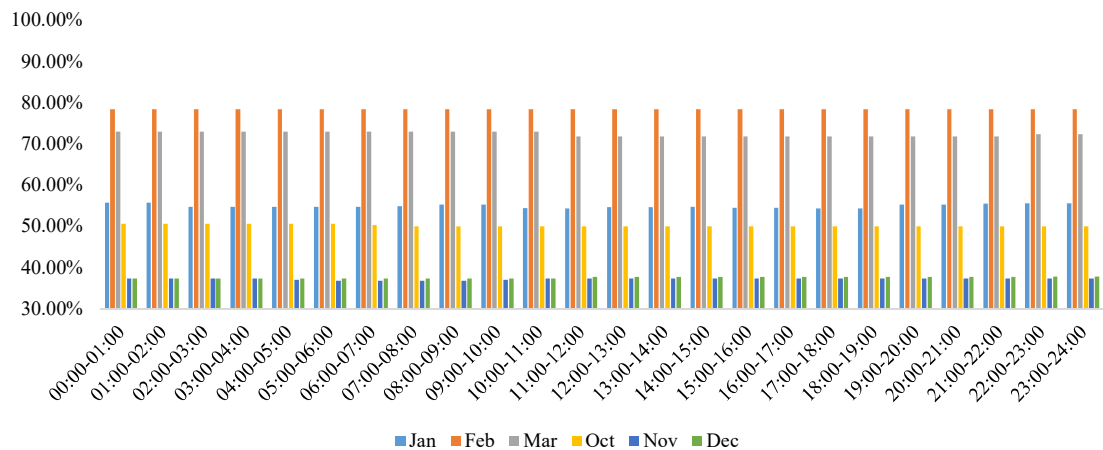
Table 70: Details of Existing PSP Capacities

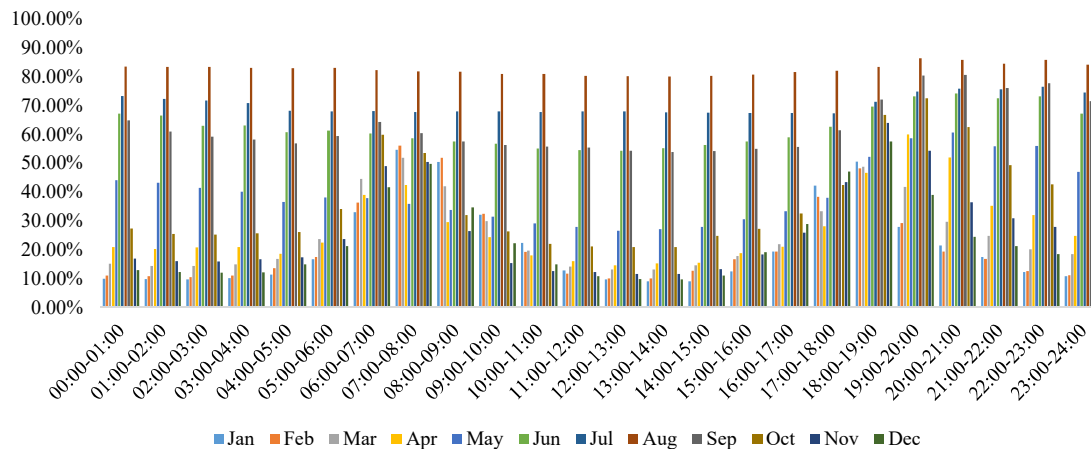
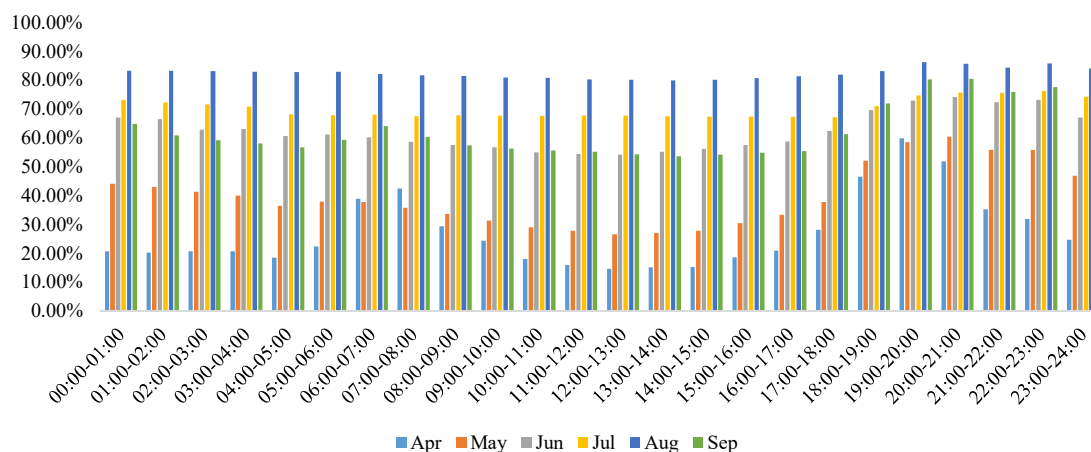
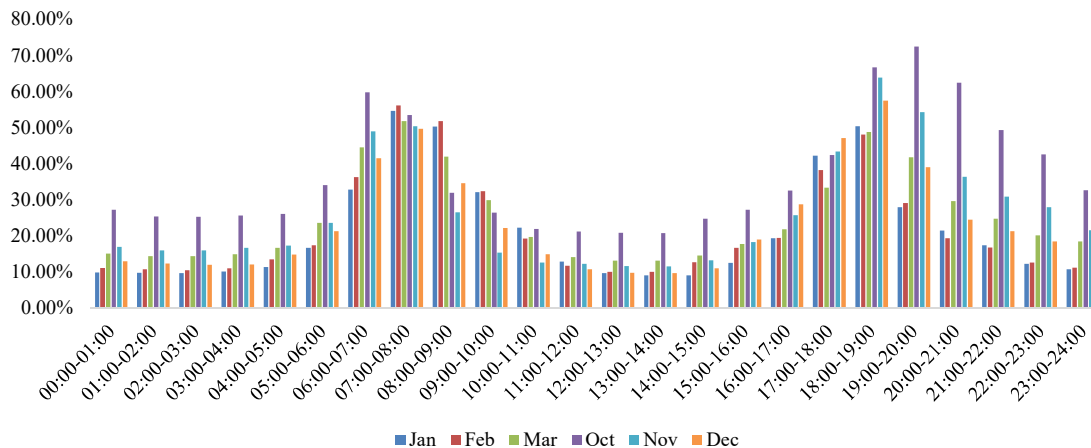
Details of Existing PSP Capacity		
S. No.	Plant Name	UPCL Share (MW)
1	THDC	200

Appendix: Section 4 – Generation Profiles of Source-wise Generators

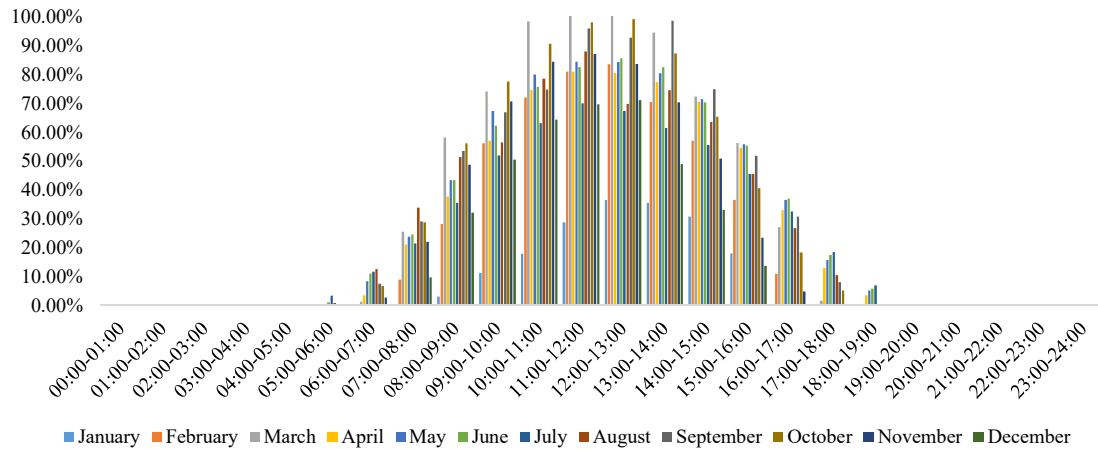
Coal Based Projects



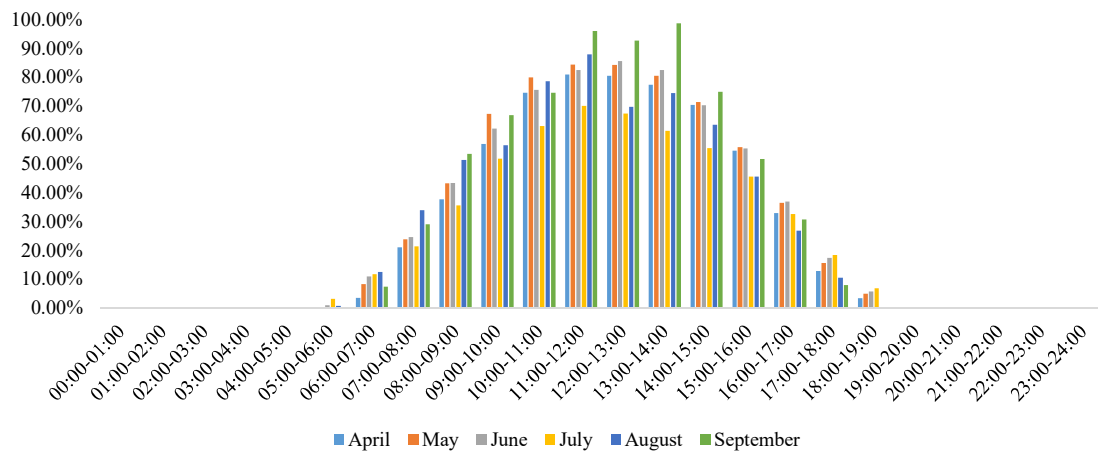
Atomic Based Power Plants' Generation Profile w.r.t. Uttarakhand

Atomic Based Power Plants' Generation Profile in Summers w.r.t. Uttarakhand

Atomic Based Power Plants' Generation Profile in Winters w.r.t. Uttarakhand


Hydro Based Power Plants' Generation Profile w.r.t. Uttarakhand

Hydro Based Power Plants' Generation Profile in Summers w.r.t. Uttarakhand

Hydro Based Power Plants' Generation Profile in Winters w.r.t. Uttarakhand


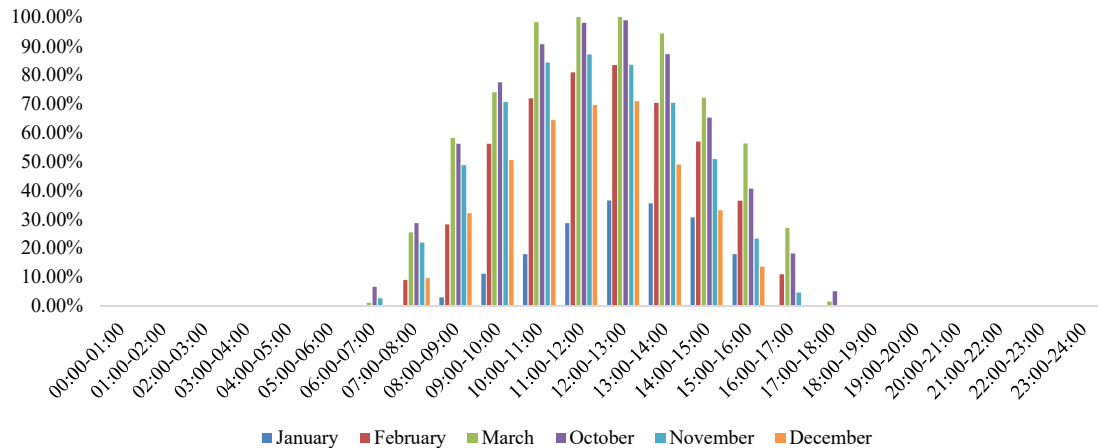
Solar Based Power Plants' Generation Profile w.r.t. Uttarakhand

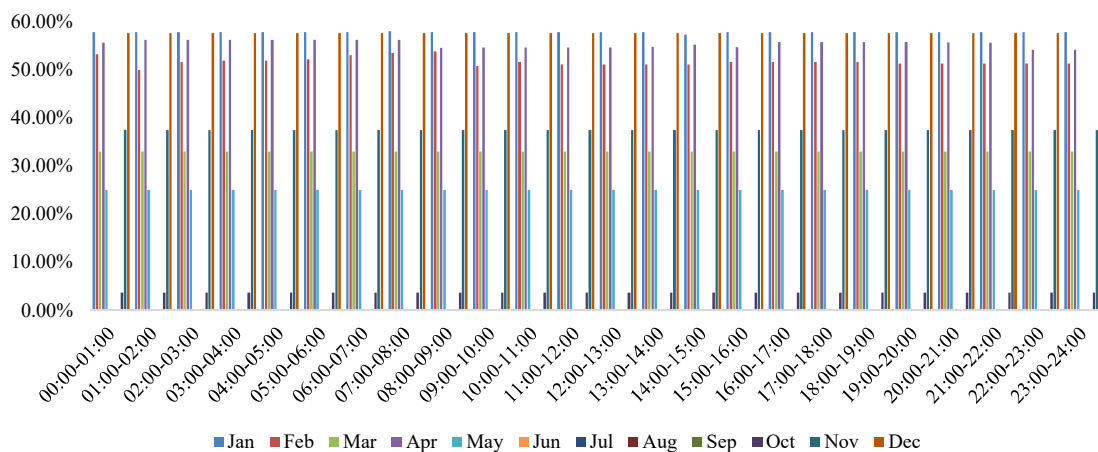
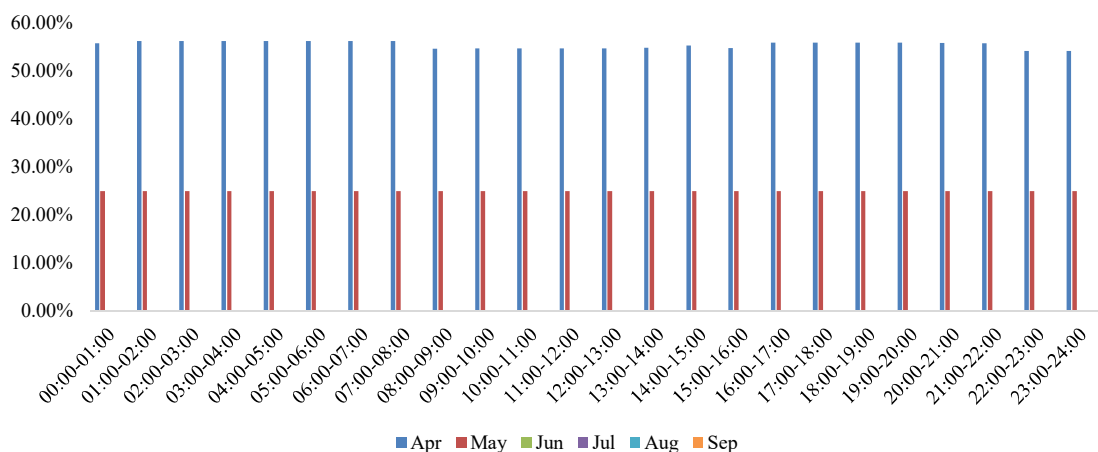
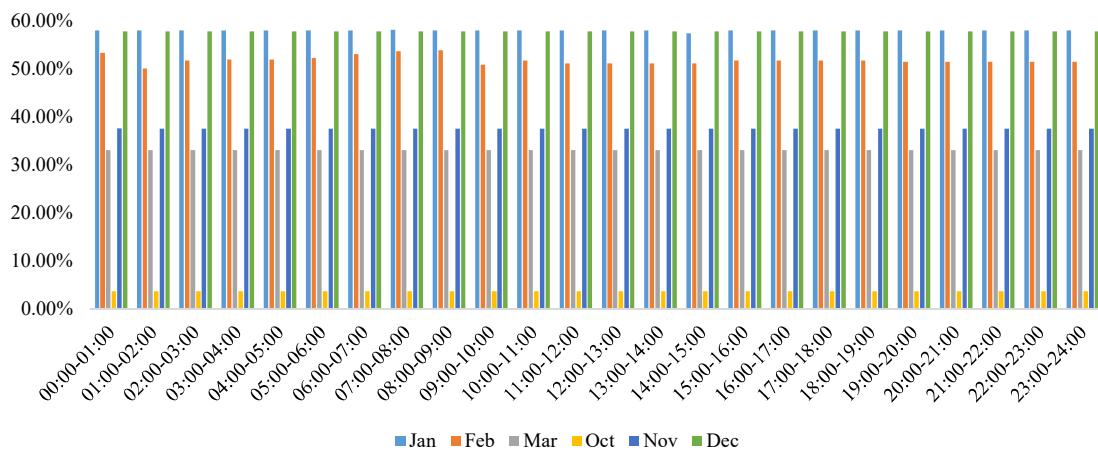


Solar Based Power Plants' Generation Profile in Summers w.r.t. Uttarakhand



Solar Based Power Plants' Generation Profile in Winters w.r.t. Uttarakhand



Sugar-Mill Based Power Plants' Generation Profile w.r.t. Uttarakhand

Sugar-Mill Based Power Plants' Generation Profile in Summers w.r.t. Uttarakhand

Sugar-Mill Based Power Plants' Generation Profile in Winters w.r.t. Uttarakhand


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Bid Sheet Medium Term

Ann-3Select
Type :☐ Go to Short Term Bid SheetSelect
Event :

UPCL/Medium/Lumpsum Tariff/24-25/RA/197



Event Ref. No. :

UPCL/Medium/Lumpsum Tariff/24-25/RA/197

Period :

30/07/2025 13:00:00 To 30/07/2025 16:03:46

Fuel Type :

Lumpsum Tariff

Sl.No.	Item Name	Indent Quantity (UOM)	Min Bid Quantity (UOM)	Description
1	1 (As per tender document)	500.0(MW)	100.0	From 18.08.2025:00.00 to 18.08.2029:24.00

Sl.No.	Bidder Ref No	Cost of Generation (Rs per KWH)	Cost of transmission charges (Rs per KWH)	Cost of transmission losses (Rs per KWH)	Bid Quantity (MW)	Total	Booking Time	Source of power
1	Jindal Power Limited/363805	2.925	0.0	0.0	150.0	5.85	RA 30/07/2025 15:53:46	Jindal Power Limited Stg-2, OP Jindal Super Thermal Power Station U 3 & 4
2	POWERPULSE TRADING SOLUTIONS LIMITED/552770	2.925	0.0	0.0	350.0	5.85	L1-Match 30/07/2025 16:14:46	Adani Power Limited Raigarh Thermal Power Plant
3	MB Power Madhya Pradesh Ltd/74236	2.995	0.0	0.0	100.0	5.99	RA 30/07/2025 15:17:40	Anuppur Thermal Power Plant of MB Power (Madhya Pradesh) Limited, Madhya Pradesh

BUCKET FILLING

Sl.No.	Bidder Ref. No.	Cost of Generation (Rs per KWH)	Cost of transmission charges (Rs per KWH)	Cost of transmission losses (Rs per KWH)	Bid Quantity (MW)	Total	Allotted Quantity
1	Jindal Power Limited/363805	2.925	0.0	0.0	150.0	5.85	150.0
2	POWERPULSE TRADING SOLUTIONS LIMITED/552770	2.925	0.0	0.0	350.0	5.85	350.0