



THE UTTAR PRADESH ELECTRICITY REGULATORY COMMISSION

LUCKNOW

Petition No. 2309 of 2025

QUORUM

Hon'ble Shri Arvind Kumar, Chairman

Hon'ble Shri Sanjay Kumar Singh, Member

IN THE MATTER OF

Petition under Section 86(1)(b) & (e) of the Electricity Act, 2003 read with Regulation 4 of the UPERC (Modalities of Tariff Determination) Regulations, 2023 and Clause 19 of the Guidelines for Tariff Based Competitive Bidding Process for Procurement of Power from Grid Connected Wind Solar Hybrid Projects dated 21.08.2023 (as amended), seeking approval of the Commission for long-term procurement of power from 300 MW Wind-Solar Hybrid Power Project through Tariff-Based Competitive Bidding process and seeking approval of deviation from the aforesaid Guidelines for Tariff Based Competitive Bidding Process for Procurement of Power from Grid Connected Wind Solar Hybrid Projects dated 21.08.2023 (as amended).

AND

IN THE MATTER OF

Noida Power Company Limited,

Plot No. ESS, Knowledge Park – IV,

Greater Noida, Uttar Pradesh – 201310

.....Petitioner

FOLLOWING WERE PRESENT

1. Sh. Sanket Srivastava, Head (Power Management), NPCL
2. Sh. Utkarsh Pandey, Senior Executive, NPCL
3. Sh. Ankur Dutt, Resident Officer, NPCL

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ORDER

(DATE OF HEARING: 19.05.2026)

1. The Petitioner, NPCL has filed instant Petition seeking approval for long-term procurement of power from 300 MW Wind-Solar Hybrid Power Project through Tariff Based Competitive Bidding Process (TBCB) process as well as approval of deviation from the Ministry of Power "Guidelines for TBCB for procurement of power from grid connected Wind-Solar Hybrid Projects" dated 21.08.2023. The prayers of the Petitioner are as follows:
 - a) Approve the procurement of power from 300 MW wind-solar hybrid power on a Long-term basis i.e., for a period of 25 (twenty-five) years through Tariff-Based Competitive Bidding process.
 - b) Approve the deviation from Clause 6.2.4 of the WSH Guidelines and allow for 100% allocation of total bid capacity to single bidder, as per Clause 19 of the WSH Guidelines as well as Regulation 4 of the Tariff Regulations.
 - c) Grant the Petitioner liberty to place on record such further and additional documents, information, and submissions as may be necessary, with the permission of this Commission; and
 - d) Pass any other order(s) as this Commission may deem fit in the facts and circumstances of the case.

Background of the case:

2. NPCL has mainly submitted following in the Petition:
 - a) Long-Term/Medium-Term tie-ups of NPCL for the supply of power from FY 2028-29 onwards are detailed below:

Long-Term Arrangements:

- (i) 171 MW RTC power at Ex-Generator's bus from M/s DIL - approximately 158 MW RTC will be available at NPCL bus.

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- (ii) 100 MW FDRE power at ISTS periphery from M/s SJVN – approximately 70 MW RTC will be available at NPCL bus (expected SCOD: FY 2026-27).
- (iii) 300 MW Wind-Solar Hybrid power at ISTS periphery from M/s Deshraj Solar Energy Power Limited– approximately 136 MW RTC will be available at NPCL bus (expected SCOD: FY 2027-28)
- (iv) 25 MW Solar Power at Ex-Generator’s bus from M/s Adani Solar Energy Chitrakoot One Limited - approximately 13-14 MW will be available during day hours at NPCL bus.
- (v) 25 MW Solar Power at Ex-Generator’s bus from M/s Tata Power Renewable Energy Limited approximately 13-14 MW will be available during day hours at NPCL bus.
- (vi) 10 MW Wind Power at Ex-Generator’s bus from M/s PTC India Limited - approximately 6-7 MW RTC will be available at NPCL bus.

Medium-Term Arrangements:

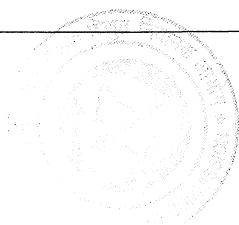
- (i) 95 MW RTC power at Ex-Generator’s bus from M/s JITPL – approximately 88 MW RTC will be available at NPCL bus (Contract will end in March 2029).

b) The Central Electricity Authority (CEA) has conducted a long-term demand forecast for NPCL. The demand projection by CEA vis-à-vis the existing power tie-ups and the deficit arising out of the existing tie-ups is as below:

Year	Average Demand (MW)	Peak demand (MW)	Existing Contract (MW)	Peak Contract (MW)	Average Deficit (MW)	Peak Deficit (MW)
	A	B	C	D	E=C-A	F=D-B
2028-29	743	1228	485	468	-258	-760
2029-30	825	1371	397	380	-429	-991
2030-31	909	1517	397	380	-512	-1138
2031-32	991	1663	397	380	-595	-1284
2032-33	1078	1817	397	380	-681	-1438
2033-34	1167	1978	397	380	-770	-1598

c) Further, the CEA has also prepared Resource Adequacy Requirement (RAR) for the licensed area of NPCL in accordance with the Guidelines for Resource Adequacy Planning (RAP) Framework, 2023 notified by the Ministry of Power, Government of

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India. Post consideration of the existing contracts, year wise capacity addition suggested by CEA under the outcome of the RAP is as below:

FY	COAL	WIND	RTC/FDRE	SOLAR	BESS (2-Hour)
2028-29	416	485	450	300	350
2029-30	371	580	500	350	450
2030-31	421	675	500	400	550
2031-32	471	770	500	450	650
2032-33	571	865	550	550	750
2033-34	671	960	600	650	850

d) Based on the capacity proposed by CEA vis-à-vis the capacity already contracted, the gap i.e., the difference of capacities yet to be contracted by NPCL is tabulated below:

FY	COAL	WIND	RTC/FDRE	SOLAR	BESS * (2-Hour)
2028-29	-150	-175	-350	-100	-270
2029-30	-200	-270	-400	-150	-370
2030-31	-250	-365	-400	-200	-470
2031-32	-300	-460	-400	-250	-570
2032-33	-400	-555	-450	-350	-670
2033-34	-500	-650	-500	-450	-770

**Petition for BESS of 80 MW/320 MWh is considered as pending before the Commission.*

- e) Considering the deficit and the RAR suggested by CEA as well as the expected load curve and the objective of meeting its RPO/RCOs, NPCL intends to procure 300 MW Wind-Solar Hybrid Power on a long-term basis for a period of 25 years in accordance with Wind Solar Hybrid Guidelines dated 21.08.2023.
- f) Clause 6.2.4 of the Wind Solar Hybrid Guidelines dated 21.08.2023 states that a maximum 50% of total capacity can be allocated to a single bidder. However, NPCL requests the Commission to approve the deviation to allocate the entire 100% capacity to a single bidder. Such restriction in the Guidelines is relevant for large capacity tenders, whereas the present tender is for 300 MW capacity only.
- g) Further, if NPCL retains 50% allocation to a single bidder, it will have to allocate 150 MW each to 2 (two) different bidders (L1 & L2) or 150 MW to one bidder (L1) and 75 MW each to two different bidders (L2 & L3) or any combinations thereof. Therefore, such small-scale allocation to multiple bidders will not help in discovering the lowest and competitive tariff.

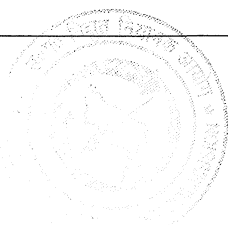
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- h) As per Clause 19 of the Wind Solar Hybrid Guidelines dated 21.08.2023, the procurer was earlier required to approach the Appropriate Government to seek prior approval for any deviation from the said Guidelines. However, by way of the amendment to the Wind Solar Hybrid (WSH) Guidelines dated 12.02.2025, the procurer is now required to approach the Appropriate Commission for deviation from the WSH Guidelines, before the initiation of bidding process.
- i) NPCL had previously (i.e., prior to the amendment dated 12.02.2025), in its earlier RfS dated 08.11.2024 for procurement of 300 MW of Wind-Solar Hybrid Power, vide its letter dated 09.07.2024 approached the Appropriate Government i.e., Department of Energy, Government of Uttar Pradesh seeking approval for the very same deviation from the Wind Solar Hybrid Guidelines i.e., 100% allocation to a single bidder. The Department of Energy, Government of Uttar Pradesh, vide its letter dated 22.08.2024, had duly approved the said deviation.
- j) Regulation 4 of the UPERC (Modalities of Tariff Determination) Regulations, 2023 mandates for (i) all Long-term power procurement to be done through the competitive bidding route with prior approval of the Commission; and (ii) prior approval of the Commission to be taken for any deviation from the TBCB Guidelines. Accordingly, NPCL seek prior approval of the Commission for (i) procurement of 300 MW Wind-Solar Hybrid Power on a long-term basis through the TBCB process; and (ii) approval of deviation i.e., 100% allocation of total bid capacity to a single bidder, for providing reliable and stable power supply to its consumers at reasonable cost.
- k) Additionally, NPCL undertakes and submits that the bid documents (i.e., RfS and draft PPA) for procurement of this 300 MW Wind-Solar Hybrid Power shall be prepared strictly in accordance with the Wind Solar Hybrid Guidelines. NPCL further undertakes that only one deviation i.e., 100% allocation of total bid capacity to single bidder, shall be made from the said Wind Solar Hybrid Guidelines, subject to the approval of the Commission and in the event any further deviation is considered necessary, NPCL shall seek prior approval, before issuing the bid documents.

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Records of Proceedings:

3. During the hearing dated 08.01.2026, on specific query of the Commission regarding bidding documents, Sh. Sanket Srivastava on behalf of NPCL responded that bidding documents would be prepared in line with the earlier approval granted by the Commission vide its Order dated 08.07.2025 in Petition No. 2183/2025. The Commission observed that NPCL should substantiate the proposed 300MW hybrid power requirement both in terms of quantum and source against its load profile, and CEA's recommendation. Sh. Srivastava sought two days' time to furnish the required details. He further stated that to meet the power deficit as well as with view of being economically most prudent, such hybrid power would optimally fit into the NPCL's requirement. The Commission allowed NPCL's request to file complete bidding documents along with justification for the proposed hybrid power over any other source of power. On 09.01.2026, NPCL filed its additional submission in the matter.
4. On hearing dated 13.01.2026, Sh. Srivastava submitted that additional affidavit was filed including draft bidding documents for the proposed hybrid power procurement. He further submitted that as per their average load curve for FY2028-29, FDRE power would become surplus (i.e., exceeding demand) in comparison to proposed hybrid power, thus they had not opted procurement of FDRE power. The Commission observed that apart from long-term tied up power of Dhariwal Infrastructure Ltd., there was no substantial firm power available in the power procurement basket of NPCL. Sh. Shrivastava submitted that they have approached the Commission as per their electricity requirement and even coal-based power procurement for medium-term was also under consideration.
5. On specific query of the Commission regarding procurement of 600MW hybrid instead of two tenders of 300MW separately for discovery of economical tariff, Sh. Shrivastava responded that it was done in conformity with power/energy requirement of NPCL because such procurement of 600MW in one go would have created surplus for NPCL in FY 2027-28. He further emphasized that power procurement was being contemplated in such a way that it matched the NPCL's load profile at optimal cost. Sh. Shrivastava argued that at present approx. 120 MW (i.e., 70MW of Open Access and 50MW of Solar

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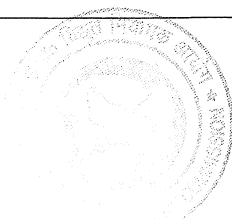
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Rooftop) had not been considered in NPCL's demand profile, while preparing plan for future power procurement.

6. The Commission observed that hybrid power was not recommended by CEA in its Resource Adequacy Report for NPCL. Sh. Shrivastava submitted that if Discom proceeds with CEA's recommendation, it would create surplus power in the range of 17-20% as compared to the actual load. In response to the Commission query about power deficit till FY2027-28, Sh. Shrivastava responded that the same would be met through short term power however, considering gestation period of the project, long term power was being planned from FY 2028-29 onwards with some medium-term procurement. The Commission observed that NPCL had not filed its justification for proposed hybrid power against the other available sources of power. Sh. Shrivastava, while apologizing, stated that RoP dated 09.01.2026 was uploaded after filing their affidavit.
7. The Commission observed that FDRE power had certain positives over hybrid power in terms of more energy thereby more RCO compliance, BESS capacity for entire tenure of the PPA, better GNA utilization etc. Sh. Shrivastava submitted that NPCL had limited GNA capacity of 500MW while average demand was also approx. 500MW therefore, GNA utilization would be efficient. He further argued that BESS installed at NPCL's Distribution network would facilitate better utilization than that owned and controlled by the Generating plant. Sh. Shrivastav requested the Commission to expediate the approval process because they intend to publish the bidding document at the earliest, since 25% waiver of transmission charges is scheduled to end in June 2028. The Commission directed NPCL to furnish following details along with relevant supporting documents:
 - a) Details of year-wise and source-wise power quantum already contracted vis-a-vis CEA's recommendation.
 - b) Justification for the proposed hybrid power over any other available source of power considering cost, power quantum, energy. Also how does this hybrid power fit into CEA's recommendation which did not contain hybrid power.
 - c) Cost benefit analysis on intermittent RE power portfolio (including proposed 300MW hybrid) as well as GNA capacity utilisation from FY 2026-27 till FY 2033-34 for peak and average load management.

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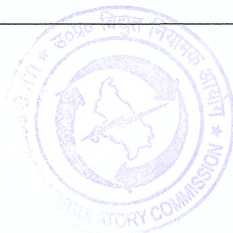


- d) Power procurement plan to meet its energy requirement as stated RPO/RCO targets till FY2029-30.
- e) Basis for considering average tariff of FDRE as Rs. 4.85/kWh, substantiated by FDRE awarded over last two years.

The Commission will take appropriate decisions subject to the above submission by NPCL. On 23.01.2026, NPCL filed its additional submission.

8. On hearing dated 23.04.2026, Sh. Srivastava submitted that additional affidavit was filed on 23.01.2026 as sought by the Commission. He further stated that proposed Wind Solar hybrid with 80MW BESS fits into NPCL's load curve since its cost was efficient in comparison to FDRE. The Commission asked about correctness of Rs. 4.85/kWh, to which Sh. Srivastava responded that he would verify the computation.
9. Sh. Srivastava submitted that comparing this hybrid power with Solar+BESS, only half of Solar Capacity would be available in non-solar peak hours in case of Solar+BESS therefore, this power does not fit into NPCL's load curve. On specific query of the Commission regarding peak hours of NPCL, Sh. Srivastava responded that there are three peak hours slots in a summer day i.e., 0-2, 14-16, & 19-22 hrs. and major contributor is Air Conditioning. He also emphasized that proposed hybrid power has 70% Wind power weightage and 30% Solar power in comparison to FDRE wherein only peak hour support would be available otherwise hybrid and FDRE are alike during day hours.
10. The Commission enquired about fossil and non-fossil portfolio in NPCL's energy mix, Sh. Srivastava responded that approx. 35% of fossil-based energy was available from Dhariwal Infrastructure Ltd. on long-term basis. The Commission observed that certain information already sought had not been properly addressed by NPCL therefore, as a last opportunity, NPCL was directed to furnish following within a week's time along with relevant supporting documents:
 - a) Details of year-wise and source-wise power quantum already contracted vis-a-vis the CEA's final recommendation (at para 7 of the Resource Adequacy Plan).
 - b) Justification for the proposed hybrid power over other available power source (i.e., thermal, hydro, Wind and Wind+BESS) considering cost, power quantum and energy.

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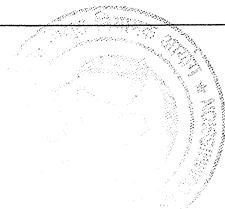
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c) Power procurement plan to meet its source wise RPO/RCO targets till FY2029-30.

11. On hearing dated 19.05.2026, Sh. Srivastava submitted that in compliance with the Commission's Order dated 24.04.2026, NPCL filed additional submissions on 05.05.2026. The Commission expressed displeasure over the inconsistencies in NPCL's computation sheet annexed as annexure-A3 (filed on 23.01.2026) and annexure-A1 (filed on 05.05.2026) in support of claimed FDRE tariff of Rs. 4.85/kWh. The annexed documents show discrepancy in FDRE tariff computation and yet NPCL claims it to be correct. Further, the calculation methodology adopted by NPCL in the present case as Average of Weightage Average itself is incorrect apart from inclusion of trading margin for cases, where it was not applicable. Sh. Srivastava argued that such computation was reflective of prevailing market conditions and also acknowledged that tariffs will fall below Rs.4.85/kWh after rectifying the highlighted errors. The Commission asked NPCL to be cautious in its future submissions to avoid confusion and doubt.
12. The Commission further enquired about considering CUF of 24% for the wind power, to which Sh. Shrivastava responded that they considered tender document wherein it was mentioned as minimum CUF to be 24% and argued that actual CUF quoted by the bidder was not available in the public domain. The Commission observed that, as per general industry practices, Solar PV based power assumes a CUF of around 22% while for Wind power it is around 35%. Further, due to consideration of lower CUF values, the estimated energy generation decreases, leading to an energy deficit for same Wind power capacity.
13. The Commission further observed that NPCL has not furnished the details of year-wise and source-wise power quantum already contracted vis-à-vis the CEA's final recommendation. Sh. Shrivastava submitted that such details were furnished at para 7- 9 the additional submission filed on 05.05.2026. On the observation of the Commission that NPCL's only long-term tied up **firm** capacity was from Dhariwal Infrastructure Ltd. He submitted that he planned to procure long-term RE power while thermal power for medium-term only.
14. The Commission further inquired why NPCL is not procuring wind and solar power separately instead of opting for hybrid to which Sh. Shrivastava responded that, as per

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current market trends, standalone wind or solar projects are not viable products for distribution licensee unless coupled with BESS or configured in hybrid mode.

15. The Commission expressed its dissatisfaction over the NPCL's power procurement strategy, particularly noting the lack of long-term thermal power arrangements and excessive reliance on short-term renewable procurement. Sh. Shrivastava submitted that medium-term renewable power is not commonly available in the market and that there are no standard bidding documents for such RE power procurement.
16. Further, Sh. Shrivastava argued that in comparison to Solar+BESS, this proposed hybrid has an advantage of supplying power during the night hours i.e., non-solar hours. On specific query of the Commission regarding peak supply hours commitments of this proposed hybrid, Sh. Sh. Shrivastava responded that there is no peak hour's commitment specified in this proposed 300MW hybrid power tender. He added that in the case of BESS, backup is typically limited to approximately 4 hours. Further, as per CEA's RAP report, NPCL would become energy surplus and therefore, it would not be optimal to follow the recommended numbers in it.

Additional Submission

17. On 09.01.2026, NPCL filed its additional submission wherein it mainly submitted the following:
 - a) Wind Solar Hybrid Guidelines do not provide any Standard Bidding Documents. Further, Clause 3.6 and 5.1(a) of the Wind Solar Hybrid Guidelines provides principles for the procurer to prepare the Bidding Documents for such power procurement. Additionally, said clause also provides that (a) any deviations from the Guidelines shall be approved as per Clause 19 of the Wind Solar Hybrid Guidelines; and (b) if the procurer, while preparing the draft RfS, PPA and PSA, provides detailed provisions, that are consistent with the Guidelines, such detailing will not be considered as deviations from the Wind Solar Hybrid Guidelines.
 - b) The draft RfS and draft PPA is prepared in consonance with the Wind Solar Hybrid Guidelines, and the salient features of the Bidding Documents are as follows:
 - (i) **Quantum (MW):** 300 MW

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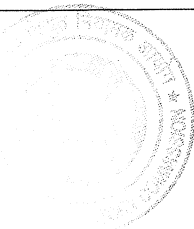


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- (ii) **Source:** Wind-Solar Hybrid in the ratio of 2:1 (i.e. 66.67% Wind and balance Solar PV Technology)
- (iii) **Bidding Platform:** ISN-ETS Portal: (<https://www.bharatelectronicstender.com>)
- (iv) **Delivery Point:** Inter connection of the project with ISTS/Intra State Transmission System
- (v) **Scheduled Commencement of Supply Date (SCSD):** 24 months from Effective Date (SCSD is proposed in Q1 of FY 2028-29)
- (vi) **Minimum Annual Capacity Utilization Factor (CUF):** 45% to 50%
- (vii) **Bucket Size:** L1+2%
- (viii) **Penalty for shortfall:** 1.5 times of PPA tariff
- c) NPCL seeks approval for minimum CUF range because such range would help NPCL in modifying the CUF if requested by the prospective bidders during the pre-bid meeting. It is prayed that such revision, being within the approved limits, be permitted without requiring fresh prior approval, so as to facilitate timely completion of the bidding process. NPCL however, undertakes to place on record the Bidding Documents, if there are any further revisions.
- d) In terms of Regulation 13(2) of the CERC (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2020, waiver of transmission charges for the use of the Inter-State Transmission System for scheduling power from eligible Renewable Hybrid Generating Stations is linked to the Commercial Operation Date (COD) of the project. Accordingly, projects achieving COD on or before 30.06.2028 are eligible for such waiver, while such waiver progressively reduces for projects which achieve COD after 30.06.2025 and no waive is there for projects achieving COD after 30.06.2028. Therefore, it is imperative that NPCL concludes the bidding process expeditiously, executes the PPA, and obtains approval of the Commission at the earliest so as to ensure that SCSD of the project is achieved as per planned, in the ultimate interest of the consumers.
- e) Pursuant to deliberations held during the pre-bid meeting and representations received from prospective bidders, certain bid parameters may be modified in order to ensure a smooth, transparent and competitive bidding process. In this regard, liberty be granted to carry out such minor modifications to the tender documents in

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a manner fully consistent with the applicable Wind Solar Hybrid Guidelines. The approval granted herein may be treated as sufficient for such limited modifications.

f) It is manifest that NPCL will be facing a power deficit ranging from about 28% in FY 2026-27 to about 64% in FY 2031-32, and even after tying up the proposed capacity, a substantial deficit would persist, for which NPCL shall procure power in accordance with applicable Regulations and shall approach this Commission for prior approval wherever so required.

18. On 23.01.2026, NPCL filed its submission against the queries of the Commission vide Order dated 19.01.2026 and submitted the following:

A. Details of year-wise and source wise power already contracted vis-à-vis CEA's recommendation

a) Summary of the energy requirement forecasted by CEA vis-à-vis tie-ups of NPCL is tabulated below:

Particulars	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32
Energy Requirement (MUs)	5,209	5,820	6,508	7,228	7,961	8,684
Existing Contract (MU)	3,749	4,450	3,758	3,100	3,100	3,100
Deficit (%) with existing contracts	28%	24%	42%	57%	61%	64%
Deficit (%) with Proposed contracts	28%	24%	24%	41%	22%	29%

b) The CEA has recommended the following capacities (MW) in its RAP Report:

Year	COAL	WIND	RTC/ FDRE	SOLAR	BESS (2 Hrs.)
2028-29	416	485	450	300	350
2029-30	371	580	500	350	450
2030-31	421	675	500	400	550
2031-32	471	770	500	450	650
2032-33	571	865	550	550	750
2033-34	671	960	600	650	850

c) Further, against the above recommendations of CEA, NPCL has so far contracted the following capacities, source-wise (MW):

Year	COAL	WIND	RTC/ FDRE	SOLAR	BESS (2 Hrs.)
2028-29	266	210	100	150	0
2029-30	171	210	100	150	0
2030-31	171	210	100	150	0
2031-32	171	210	100	150	0
2032-33	171	210	100	150	0
2033-34	171	210	100	150	0

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d) In view of above, estimated Deficit (-)/Surplus (+) power is tabulated below (MW):

Year	COAL	WIND	RTC/ FDRE	SOLAR	BESS (2 Hrs.)
2028-29	-150	-275	-350	-150	-350
2029-30	-200	-370	-400	-200	-450
2030-31	-250	-465	-400	-250	-550
2031-32	-300	-560	-400	-300	-650
2032-33	-400	-655	-450	-400	-750
2033-34	-500	-750	-500	-500	-850

- e) NPCL will be facing a progressively increasing deficit in RE capacity, particularly in Wind and Solar. By FY 2033-34, the deficit is likely to reach approximately 750 MW in Wind and 500 MW in Solar power. The proposed procurement of 300 MW of Wind Solar Hybrid power, comprising approximately 200 MW of Wind capacity and 100 MW of Solar capacity, directly addresses the identified deficits. Further, CEA's recommendations do not separately classify hybrid power as a distinct source.
- f) NPCL was aware that there was also a deficit in FDRE as per CEA's indicative trajectory. However, FDRE procurement at this stage provides sub optimal solutions from both technical and commercial perspectives. Therefore, proposed Wind Solar Hybrid procurement represents a prudent and least cost intermediate step in its RE transition.

B1: Justification for the proposed hybrid power over any other available source of power considering cost, power quantum, energy.

(a) Comparing with 300 MW FDRE Power

- g) NPCL experiences consistent peak power demands in the evening and night hours. When NPCL's demand profile for FY 2028-29 is examined, it is found that FDRE power would lead to surplus power during morning and afternoon hours i.e., 08:00-15:00 Hrs. Whereas Wind Solar Hybrid power was found to be well-within its demand profile.
- h) On the cost front, the average rates of FDRE power discovered in the market in the last 2 years in the bids was Rs. 4.85/kWh. NPCL has already filed a Petition for setting-up of 80 MW/320 MWh BESS and with both 300 MW Wind Solar Hybrid power and 80 MW/320 MWh BESS with this arrangement, NPCL would create FDRE

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equivalent at a better cost and better control/utilisation. A cost comparison of NPCL's proposal for BESS and WSH power with that of FDRE is set out below:

Per Unit Cost (Fixed Cost+ Charging Cost)			
Parameter	Unit	Formula	Quantity
Power Capacity	MW	A	80
Hrs. of Dispatch	Hrs.	B	4
No of Cycle	Per Day	C	1
Day in year	Days	D	365
Discovered Rate [§]	(Rs./MW/Month)	E	3,59,000
Rate/Capacity/year	Rs. /Year	F=AxE _x 12	34,46,40,000
Energy per year	MUs/Year	G=AxBxCxD/1000	116.8
Fixed Charges	Rs. /kWh	H=(F/G)	2.95
Energy Charges towards charging*	Rs. /kWh	I=3.08/85%	3.62
Total Charges	Rs. /kWh	J=H+I	6.57

*Considering RtE of 85%

§ Discovered in UPPCL's BESS Bid

Type of Power	MW	MU*	Rs. /kWh	Cr.
FDRE	300	1971	4.85	955.94

*Considering CUF of 75% as per the Petitioner's FDRE.

Type of Power	MW	MU*	Rs. /kWh	Cr.
Hybrid	300	1261	3.84	484.39
BESS [§]	80	117	6.57	76.79
Total		1378	4.07	561.18
Annual Saving (Rs. Cr.)				394.76

* Considering CUF of 48% for hybrid and 75% for FDRE.

§. Details of BESS tariff has already been submitted in the additional submission dated 09.01.2026 and therefore, the same is not repeated for the sake of brevity.

- i) Further, procuring 300 MW FDRE power will result in huge surplus particularly in the winter season. A cost comparison of NPCL's proposal with FDRE is set out below:

Type of Power	MW	MU*	Rs. /kWh	Cr.
FDRE	210	1380	4.85	669.15

*Considering CUF of 75% as per Petitioner's FDRE

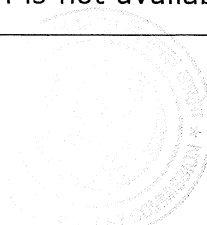
Type of Power	MW	MU*	Rs. /kWh	Cr.
Hybrid	300	1261	3.84	484.39
BESS	80	117	6.57	76.79
Total		1378	4.07	561.18
Annual Saving (Rs. in Cr.)				107.97

* Considering CUF of 48% for hybrid and 75% for FDRE

(b) Comparison with 300 MW Solar + BESS Power:

- j) The proposed 300 MW Wind Solar Hybrid power with Wind to Solar ratio of 2:1 to ensure the higher generation during evening/night hours through the wind sources when the solar generation is not available. The contribution of wind power in non-

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solar hours is quite substantial as the same would be available for 12 -13 hours (during non-solar periods). Whereas, solar + BESS combination gives power only upto 4 (four) hours in the evening/peak hours (non-solar hours).

k) Assessment of demand profile during FY 2028-29 indicates that a Solar+BESS configuration would result in substantial deficits during night and evening hours across seasons, alongside surplus generation in winters. In contrast, proposed hybrid power better aligns with demand. Therefore, Solar+BESS will lead to substantial deficit in the night/evening hours, which would be require to be met from the power market where non-solar power availability is highly uncertain. The detailed calculation is presented below:

NPCL Proposal				
Type of Power	Capacity (MW)	Energy (MU)	Tariff (Rs./kWh)	Amount (Cr.)
Hybrid	300	1280	3.84	491.53
BESS	80	177	6.57	76.74
Total Power purchase		1397	4.07	568.26
Comparison with Solar +BESS				
Type of Power	Capacity (MW)	Energy (MU)	Tariff (Rs./kWh)	Amount (Cr.)
Solar with BESS	300	955	3.30	315.17
Balance to be procured from Power Exchanges*		442	7.08	312.71
Total Power purchase		1397	4.50	627.89
Saving			0.43	59.62

*Note: 1. The rate of Rs. 3.30/kWh has been considered as the average discovered rate for solar + BESS during the last 2 (two) years.

2. Rs. 7.08/kWh is weighted average of last 2 (two) years in G-DAM market for the corresponding deficit hours. Further, as there would not be any waiver in ISTS charges for the purchase of power from PX, the landed cost of such power would be more than the proposed power by the Petitioner for the same quantum (effectively Rs. 0.12/kWh would be added as against Rs. 1.28/kWh in the scenario proposed by the Petitioner to arrive at landed cost at NPCL bus).

(c) Comparison with 300 MW Thermal Power:

l) As per MoP's RPO/RCO Notification dated 27.09.2025, NPCL is required to procure 41.36% of its total power procurement from RE sources in FY 2028-29. Therefore, if NPCL procures thermal power alone beyond certain limits, it would not be able to comply with the notified RCO/RPO targets. With the proposed hybrid power, NPCL would receive annual energy of around 1,179 MU at the NPCL bus. This would allow NPCL to achieve the RCO target in FY 2028-29. The details are presented below:

Particulars	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
Energy Requirement (in MUs)	5,209	5,820	6,508	7,228

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RPO Compliance Target (%)	35.95%	38.81%	41.36%	43.33%
RPO Compliance Target (in MUs)	1,872	2,259	2,692	3,132
Compliance with Thermal contract				
Target met with thermal contracts (MUs)	531	1,932	1,932	1,932
Target met with existing contracts	10%	33%	30%	27%
Compliance with 300 MW hybrid power				
Target met with 300 MW hybrid (MU)	531	1932	3111	3111
Target met with 300 MW hybrid	10%	33%	48%	43%

m) NPCL plans to purchase 100MW thermal power for FY 2028-29 onwards on medium-term basis, primarily to enhance operational flexibility and ensure grid reliability for which it will take prior approval of the Commission.

(d) Comparison with 300 MW Hydro Power:

n) At this stage, NPCL has not proposed power procurement from hydro power projects due to its long development and commissioning period, which typically extends to about 5 to 6 years. Hydro generation is subject to hydrological risks and seasonal variability, including dependence on monsoon patterns, which may not reliably align with the NPCL's demand profile and requirements. Further, access to new hydro capacity is limited. The tariff discovery for hydro power often reflects higher capital costs and associated financing risks, which result in higher rates. On the other hand, hybrid power projects can be commissioned within a relatively short time-period (typically 2 years) thereby allowing timely capacity addition and better alignment with the projected demand growth in a cost-effective manner.

B2: Hybrid power fit into CEA's recommendation.

o) The absence of an explicit reference to 'hybrid' power in the CEA's RAP Report does not imply any exclusion thereof, as the recommendations are framed at a macro planning level. Decision to procure hybrid power is merely a procurement and design choice adopted by NPCL to fulfil the same underlying wind and solar capacity requirements identified by the CEA, while enhancing operational efficiency and ensuring grid reliability.

p) The CEA's Report recommends capacity addition across broad technology segments, namely coal, solar power, wind power, FDRE and BESS, with the objective of ensuring reliable and adequate power supply to meet projected demand. The

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proposed 300 MW Wind Solar Hybrid power squarely fits within capacity mix recommended by the CEA, particularly with respect to wind and solar power.

C: Cost benefit analysis on intermittent RE power portfolio (including proposed 300MW hybrid).

- q) All the RE sources are inherently intermittent. To manage this intermittency, energy storage systems such as BESS are required at distribution end. Further, FDRE power as well as Solar + BESS power is also intermittent and must-run in nature. However, FDRE and Solar + BESS ensure firm power through BESS in predefined peak hours only. Therefore, purchasing FDRE or other RE power does not mitigate intermittency. NPCL intends to install the 80MW/320 MWh BESS at its distribution end for managing peak power requirement which gives better control and optimum utilisation of BESS capacity by the distribution licensee. As already explained hybrid coupled with BESS is more cost effective than FDRE and Solar+BESS.

D: GNA capacity utilisation from FY 2026-27 till FY 2033-34 for peak and average load management

- r) GNA is calculated based on the ISTS drawl and any power procured through intra-State contracts is treated as being outside the scope of the GNA. The demand beyond the GNA upto the peak demand will be managed through T-GNA. This will ensure that the sanctioned GNA is being efficiently utilized and requirement for T-GNA arise only during peak load conditions. Further, the following is the GNA capacity utilisation from FY 2026-27 till FY 2033-34 for peak and average load management:

Particulars	Formula	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
NPCL's Average Demand (MW)									
Average Demand- Summer (MW) as per CEA	A	694	775	867	963	1061	1157	1258	1363
Average Demand - Winter (MW) as per CEA	B	495	553	618	687	756	825	897	972
NPCL's Peak Demand (MW)									
Peak Demand- Summer (MW) as per CEA	C	973	1093	1228	1371	1517	1663	1817	1978
Peak Demand- Winter (MW) as per CEA	D	799	893	998	1109	1221	1332	1448	1570
Existing GNA (MW)	E	501	501	501	501	501	501	501	501
GNA Utilisation (Scenario -1)									
Additional GNA of 100 MW	F	0	100	200	300	400	500	600	700
Total GNA (MW)	G = E+F	501	601	701	801	901	1001	1101	1201
GNA Utilisation - Summer	H	98%	99%	99%	99%	99%	99%	98%	98%
GNA Utilisation - Winter	I	93%	90%	88%	87%	86%	85%	84%	84%

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Yearly GNA Utilisation	$J=(H+I)/2$	95%	95%	94%	93%	92%	92%	91%	91%
GNA Energy - Yearly (MUs)	$K = G*24*365/1000$	4389	5265	6141	7017	7893	8769	9645	10521
TGNA Energy- Summer (MUs)	L	563	932	936	961	995	1024	1073	1142
TGNA Energy - Winter (MUs)	M	180	129	101	86	77	70	68	69
GNA Charges-Summer (Rs. Cr.)	$N = K/2*0.50/10$	110	132	154	175	197	219	241	263
TGNA Charges - Summer (Rs. Cr.)	$O = L * 0.55/10$	31	51	51	53	55	56	59	63
GNA Charges- Winter (Rs. Cr.)	$P = K/2*0.50/10$	110	132	154	175	197	219	241	263
TGNA Charges-Winter (Rs.Cr.)	$Q = M * 0.55/10$	10	7	6	5	4	4	4	4
Yearly Charges (Rs. Cr.)	$R = N + O + P + Q$	260	322	364	408	454	499	545	593
GNA Utilisation (Scenario -2)									
Additional GNA of another 50 MW	$S=G+50$	501	651	751	851	951	1051	1151	1251
GNA Energy - Yearly (MUs)	$T = S*24*365/1000$	4389	5703	6579	7455	8331	9207	10083	10959
TGNA Energy- Summer (MUs)	U	563	732	742	772	809	842	894	964
TGNA Energy - Winter (MUs)	V	180	58	47	42	40	37	38	40
GNA Charges- Summer (Rs. Cr.)	$W = T/2*0.5/10$	110	143	164	186	208	230	252	274
TGNA Charges- Summer (Rs. Cr.)	$X = U*0.55/10$	31	40	41	42	45	46	49	53
GNA Charges- Winter (Rs. Cr.)	$Y = T/2*0.5/10$	110	143	164	186	208	230	252	274
TGNA Charges- Winter (Rs. Cr.)	$Z = V* 0.55 /10$	10	3	3	2	2	2	2	2
Yearly Charges (Rs. Cr.)	$AA = W + X+Y+Z$	260	329	372	418	463	509	555	603
Additional Yearly Charges (Rs. Cr.)	AB = AA-R	0.00	7.42	7.96	9.59	9.41	10.40	10.02	10.33

* GNA Utilisation is calculated considering the time-block wise demand which is within the sanctioned GNA in a year

- s) If NPCL increases the additional GNA by another 50 MW (say) from FY 2027-28 onwards then the total GNA charges would be more than the corresponding T-GNA charges that would have been incurred by NPCL. In other words, if increase in additional GNA by another 50 MW, then the total charges would be Rs. 329 Cr. However, if NPCL opts not to take additional GNA of 50 MW and restricts itself to scenario-1 then the balance 50 MW will be taken under T-GNA which takes the total charges to Rs. 322.Cr. i.e. less than the same incurred on GNA of additional 50 MW under scenario-2.
- t) Accordingly, in FY 2027-28 and FY 2028-29 an additional GNA of 100 MW will be required each year to optimally manage the load requirement and corresponding optimization of GNA charges. GNA application for FY 2028-29 would be filled by September 2027 therefore, above proposed GNA quantum may increase or decrease

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which will depend upon the prevailing demand pattern. The proposed 300 MW Wind Solar hybrid power would be optimally utilized under above proposed GNA capacity.

D: Power procurement plan to meet its energy requirement as stated RPO/RCO targets till FY 2029-30.

- u) The MoP has vide its notification dated 27.09.2025 stipulated the following trajectory for RPO/RCO till FY 2029-30:

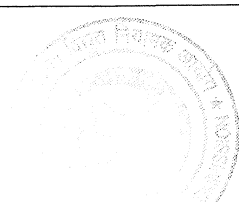
Particulars	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
Energy Requirement (MUs)	5,209	5,820	6,508	7,228
RPO Target (%)	35.95%	38.81%	41.36%	43.33%
RPO Target (MUs)	1,872	2,259	2,692	3,132

- v) Against the above target, currently NPCL has the following RE tie-ups:

Particulars	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
Energy Requirement (in MUs)	5,209	5,820	6,508	7,228
RPO Compliance Target (%)	35.95%	38.81%	41.36%	43.33%
RPO Compliance Target (MUs)	1,872	2,259	2,692	3,132
Compliance with existing contract				
Target met with existing contracts (MUs)	531	1,932	1,932	1,932
Target met with existing contracts	10%	33%	30%	27%
Compliance with 300 MW hybrid power				
Target met with 300 MW hybrid (MU)	531	1,932	3111	3111
Target met with 300 MW hybrid	10%	33%	48%	43%
Compliance with 300 MW FDRE power				
Target met with 300 MW FDRE (MU)	531	1,932	3775	3775
Target met with 300 MW FDRE (%)	10%	33%	58%	52%
Compliance with 300 MW solar + BESS power				
Target met with 300 MW Solar + BESS (MU)	531	1,932	2887	2887
Target met with 300 MW Solar+BESS	10%	33%	44%	40%

- w) Therefore, it is evident that NPCL has a substantial shortfall in meeting its RPO/RCO targets under the existing contracts. Further, if NPCL is to tie up other renewable energy sources instead of hybrid sources such as FDRE power or Solar + BESS, the RCO/RPO targets would either be over-achieved or under achieve that too at a higher cost in both the scenario. On the other hand, proposed 300 MW Hybrid power project would be instrumental in optimally meeting the RPO/RCO targets, owing to its suitable generation profile and cost competitiveness.

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19. On 05.05.2026, NPCL filed additional submission in compliance with the Commission order dated 24.04.2026 wherein it mainly submitted the following:

A. Year and Source wise power quantum already contracted vis-à-vis CEA Final recommendation

a) NPCL reiterated its earlier submission filed on 23.01.2026 in this regard.

B. Justification of the proposed hybrid power over other available sources

b) **Comparison with 300 MW Thermal Power:** NPCL not able to comply with MoP's Notification dated 27.09.2025 regarding RPO/RCO targets, if procures thermal power alone beyond certain limits. Thermal power is relatively cost-intensive. However, NPCL plan to purchase thermal power for FY 2027-28 onwards on medium-term basis, primarily to enhance operational flexibility and ensure grid reliability. A cost comparison of thermal power with hybrid power for the same quantum is presented below:

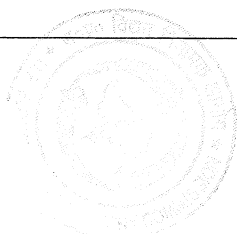
NPCL Proposal				
Type of Power	Capacity (MW)	Energy (MU)	Tariff (Rs. /kWh)	Amount (in Cr.)
Thermal*	100	745	5.38	400.82
Hybrid **	300	1280	3.84	491.53
Total Power purchase		2025	4.41	892.35
Comparison with Thermal Power				
Type of Power	Capacity (MW)	Energy (MU)	Tariff (Rs. /kWh)	Amount (in Cr.)
Thermal	231	2025	5.38	1089.85
Saving (in Cr.)			0.98	197.51

*For comparison purpose, the Petitioner has considered the rate of Rs. 5.38/kWh as discovered in UPPCL's recent thermal tender.

** The petitioner has considered the rate of Rs. 3.84/kWh as discovered in Petitioner last hybrid tender with same configurations.

c) **Comparison with 300 MW Hydro Power:** NPCL has recently received an offer from M/s Tata Power Trading Company Limited (TPTCL) for supply of long-term hydro power at a tariff of Rs.6.95/kWh excluding transmission charges with commencement of supply from FY 2032 onwards which is not cost-optimal when compared to proposed hybrid power. Furthermore, the said offer contemplates commencement of supply only from FY 2032 onwards. Therefore, proposed 300 MW

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hybrid power, which offers lower tariffs and early commissioning timelines as compared to hydro power, is a more viable and cost-efficient option at the moment.

- d) **Comparison with Wind Power:** The proposed 300 MW Wind-Solar hybrid power would generate an annual energy of 1,280 MU at generator's bus with a significant share of 895 MU (i.e. 70%) contributed by wind power during peak and evening hours. In comparison, a standalone 300 MW Wind power at a CUF of 24% would generate an annual energy of around 632 MU which would require additional electricity of around 648 MU (including 263 MU during non-solar hours) from the market which is highly volatile particularly during non-solar hours and thereby increases the overall power purchase cost. Notably, wind power tenders issued by REIAs and DISCOMs have been relatively limited in recent years and the tariffs discovered in these tenders have also remained relatively high with an average of around Rs. 3.78/kWh. This is quite comparable to the tariff of Rs.3.84/kWh discovered in NPCL's recent wind solar hybrid tender. A cost comparison is presented below:

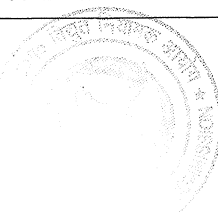
NPCL Proposal				
Type of Power	Capacity (MW)	Energy (MU)	Tariff (Rs./kWh)	Amount (in Cr.)
Hybrid	300	1280	3.84	491.53
Total Power purchase		1280	3.84	491.53
Comparison with Wind Power				
Type of Power	Capacity (MW)	Energy (MU)	Tariff (Rs. /kWh)	Amount (in Cr.)
Wind*	300	632	3.78	238.86
Balance to be procured from Power Exchanges**		648	4.44	287.55
Total Power purchase		1280	4.11	526.41
Saving (in Cr.)			0.27	34.89

* CUF for wind power has been considered at 24% (Avg. CUF of last 2 years wind tenders).

** The rate of Rs. 4.44/kWh is weighted average of last 3 years G-DAM rates in the balance hours.

- e) **Comparison with Wind+BESS Power:** As on date, no tenders have been issued by any procurer including REIAs specifically for procurement of Wind + BESS. Accordingly, no standard bidding documents are currently available for such procurement. However, for comparison purposes, there are two possible configurations for integrating BESS with wind projects: (i) Wind+BESS charging from wind power and (ii) Wind with BESS at the NPCL's end charged from solar power. An estimated cost comparison of both the above options is presented below.

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NPCL Proposal				
Type of Power	Capacity (MW)	Energy (MU)	Tariff (Rs./kWh)	Amount (in Cr.)
Hybrid	300	1280	3.84	491.53
BESS (charging from solar power)	80	117	6.57	76.74
Total Power purchase		1397	4.07	568.26
Comparison with Wind +BESS				
Type of Power	Capacity (MW)	Energy (MU)	Tariff (Rs./kWh)	Amount (in Cr.)
Wind + BESS	300	851	4.71	400.88
Balance to be procured from Power Exchanges*		546	4.32	235.67
Total Power purchase		1397	4.56	636.55
Saving (in Cr.)			0.49	68.28

*The tariff of Rs.4.71/kWh for wind + BESS has been considered as the weighted average rate considering wind power at Rs. 3.78/kWh and the cost of BESS at Rs. 7.40/kWh charging from wind power.

**The rate of Rs. 4.32/kWh is weighted average of last 3 years G-DAM rates in the balance hours.

f) Comparison with 300 MW Wind Power along with 80 MW BESS at NPCL's end:

Comparison with Wind & Standalone BESS at distribution end				
Type of Power	Capacity (MW)	Energy (MU)	Tariff (Rs./kWh)	Amount (in Cr.)
Wind	300	632	3.78	238.86
BESS (charging from solar power)	80	117	6.57	76.74
Balance to be procured from Power Exchanges*		648	4.44	287.55
Total Power purchase		1397	4.32	603.15
Saving (in Cr.)			0.25	34.89

*The rate of Rs. 4.44/kWh is weighted average of last 3 years G-DAM rates in the balance hours.

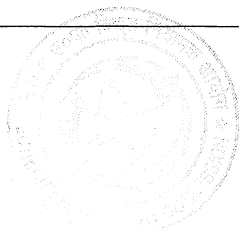
g) As evident from above, proposed 300 MW hybrid power along with BESS at the distribution end offers a more optimal configuration in terms of cost-effective and balanced solution for renewable energy procurement.

C. Power procurement plan to meet its source wise RPO/RCO targets till FY 2029-30.

h) The MoP has vide its Gazette Notification dated 27.09.2025 stipulated the following source wise trajectory for RPO/RCO till FY 2029-30:

Sl. No.	Year	Wind RE	Hydro RE	Distributed RE	Others RE	Total RE (%)
1.	2026-27	1.97%	1.34%	2.70%	29.94%	35.95%
2.	2027-28	2.45%	1.42%	3.30%	31.64%	38.81%
3.	2028-29	2.95%	1.42%	3.90%	33.10%	41.36%
4.	2029-30	3.48%	1.33%	4.50%	34.02%	43.33%

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- i) Against the above target, currently NPCL has the following source wise RPO/RCO compliance status:

Sl. No.	Year	Wind RE	Hydro RE	Others RE	Total RE (%)	Distributed RE
		A	B	C	D=A+B+C	E
1.	2026-27	0.00%	0.00%	9.14%	9.14%	1.82%
2.	2027-28	20.93%	0.00%	12.29%	33.21%	1.88%
3.	2028-29	18.72%	0.00%	10.99%	29.70%	1.91%
4.	2029-30	16.85%	0.00%	9.89%	26.74%	1.92%

- j) Based on the above, Deficit(-)/Surplus(+) in RPO/RCO compliance is as below:

Sl. No.	Year	Wind RE	Hydro RE	Others RE	Total RE (%)	Distributed RE
		A	B	C	D=A+B+C	E
1.	2026-27	-1.97%	-1.34%	-20.80%	-24.11%	-0.88%
2.	2027-28	18.48%	-1.42%	-19.35%	-2.30%	-1.42%
3.	2028-29	15.77%	-1.42%	-22.11%	-7.76%	-1.99%
4.	2029-30	13.37%	-1.33%	-24.13%	-12.09%	-2.58%

- k) In order to meet the above shortfall, with the proposed 300 MW hybrid power, following will be the status for RPO/RCO:

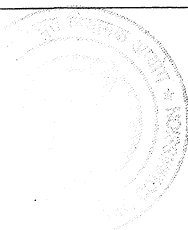
Sl. No.	Year	Wind RE	Hydro RE	Others RE	Total RE (%)	Distributed RE
		A	B	C	D=A+B+C	E
1.	2026-27	0.00%	0.00%	9.14%	9.14%	1.82%
2.	2027-28	20.93%	0.00%	12.29%	33.21%	1.88%
3.	2028-29	31.42%	0.00%	16.38%	47.80%	1.91%
4.	2029-30	28.29%	0.00%	14.75%	43.04%	1.92%

- l) The aforesaid Notification dated 27.09.2026 provides that surpluses under wind, hydro and other renewable components are fungible except Distributed Renewable Energy (DRE). Therefore, proposed 300 MW hybrid power will play an important role in optimally meeting NPCL's RPO/RCO targets particularly from FY 2028-29 onwards.

Analysis & Decision

20. NPCL by way of present Petition is seeking prior approval for (i) procurement of 300 MW of Wind-Solar Hybrid Power on a long-term basis for 25 years through TBCB process; and (ii) approval of deviation (i.e., 100% allocation to a single bidder) from the Ministry of Power notified "Guidelines for TBCB for procurement of power from grid connected Wind-Solar Hybrid Projects" dated 21.08.2023.

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21. NPCL has contended that this 300MW hybrid power squarely fit into its procurement plan in terms of CEA's RAP report as well as in meeting its RPO/RCO targets. Further, NPCL submits that this proposed hybrid power has cost advantage over other available sources of power. With respect to different source-wise power, NPCL justify its hybrid power procurement on the following terms:

S. No.	Power Source	NPCL Submissions
1.	FDRE	FDRE power would lead to surplus power during morning and afternoon. Further huge surplus during the winter season.
2.	Solar with BESS	It would result in substantial deficits during night and evening hours across seasons, alongside surplus generation in winters.
3.	Coal based thermal	Procuring thermal power alone beyond certain limits, it will not be able to comply with the RCO/RPO targets. Plan to purchase thermal power for medium-term period.
4.	Hydroelectric Power	Due to long development and commissioning period, which typically extends to about 5 to 6 years. Further, such projects are risk prone for their hydrology, reliability, and variability along with higher cost of generation/tariff.
5.	Wind	It would generate an annual energy of around 632MU (CUF @24%), which would require additional power procurement from the market, which is highly volatile particularly during non-solar hours, which will increase the overall cost. Higher Wind Tariff of Rs.3.78/unit.
6.	Wind with BESS	No tenders have been issued by any procurer including REIAs for such procurement. Also, no standard bidding documents are currently available for such procurement.

22. To examine whether the NPCL's claim of 300MW hybrid power procurement is justified or not, it is necessary to first go through the CEA's Final Report on 'Resource Adequacy Plan (RAP)' for NPCL. The CEA in its RAP Report pointed out that this Resource Adequacy has been carried out to ensure that adequate generation supply is available to meet the expected demand at least cost. This RAP report was prepared after taking into account inputs from NPCL and RPO/RCO trajectory issued by the Ministry of Power, Government of India. The relevant extract of the RAP report is reproduced below:

"Resource Adequacy is generally defined as a mechanism to ensure that there is an adequate supply of generation resources to serve expected demand reliably at least cost. A key aspect of resource adequacy planning is to ensure that adequate generation capacities are available, round-the-clock, to reliably serve

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demand, under various scenarios. This naturally translates into the need for ensuring adequate reserve margin, which could cater to varying levels of demand and supply conditions in the grid. In the wake of high RE generation, it is important to understand demand-supply situation in the grid precisely due to high seasonality and intermittency in RE generation. Resource Adequacy exercise may also help in assessment of capacity requirement to be tied up or contracted on long term, medium term, and short-term basis.

.....
Resource Adequacy studies has been carried out for NPCL, Uttar Pradesh in fulfilment of the designated RPO trajectory, on the basis of the inputs received from NPCL. The study suggests the optimal resource mix till 2032 taking into account of the technical and financial parameters associated with capacities. The study optimizes power purchase on a long-term basis while evaluating resource adequacy for meeting the demand 24 X 7 considering variation in demand, RE generation and forced outages of thermal capacities. The study has also assessed the requirement of Planning Reserve margin for NPCL, UP catering to above highlighted uncertainties so that demand can be met reliably throughout the year.”

23. Therefore, RAP for NPCL is an outcome of the CEA’s intensive study on power scenario for NPCL. The CEA, being a competent technical body established under the Electricity Act, 2003, has been vested with various functions related to generation, transmission and distribution of electricity and therefore, its Resource Adequacy Report for NPCL or for that matter any other discoms cannot be ignored. In its RAP report, CEA has considered the same electrical energy requirement projections, and peak demand projections as provided by NPCL. The relevant extract of the said RAP report is reproduced below:

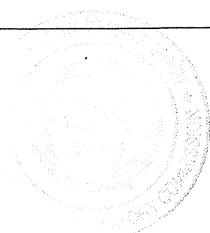
“3.0 Inputs/Assumptions for the Study

- i) The electrical energy requirement projections (MU) and peak demand (MW) projections as received from NPCL (study done in consultation with CEA) for the period up to 2033-34 have been considered:

Table 2 Peak Demand (MW) and Energy requirement (MU) projections

	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34
<i>Energy Projections (MU)</i>	4069	4,647	5,209	5,820	6,508	7,228	7,961	8,684	9,441	10,223
<i>Year on Year Growth</i>	13%	14%	12%	12%	12%	11%	10%	9%	9%	8%
<i>Peak Demand Projections (MW)</i>	753	864	973	1093	1228	1371	1517	1663	1817	1978
<i>Year on Year Growth</i>	14%	15%	13%	12%	12%	12%	11%	10%	9%	9%

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24. Thereafter, the CEA, after considering NPCL's existing contracted capacity as well as its RPO/RCO targets as notified by the Ministry of Power, has finally recommended the following year-wise & source-wise future capacity to be contracted by NPCL:

"7. Capacity contract requirement for future

It has been found out in the studies that NPCL needs to contract following capacities (additional) per year till 2033-34 to meet its demand reliably along with the fulfilment of its RPO as notified by Ministry of Power.

Table 7 Year-wise Capacity Addition for NPCL (in MW)

Year	Coal	Wind	RE-RTC / FDRE*	Solar	BESS (2-hour)	STOA (Market / Bilateral requirement)
2024/25	0	95	100	0	0	270
2025/26	0	95	40	100	50	350
2026/27	50	95	70	50	150	450
2027/28	50	95	70	50	250	500
2028/29	50	95	70	50	350	530
2029/30	50	95	50	50	450	650
2030/31	50	95	0	50	550	850
2031/32	50	95	0	50	650	990
2032/33	100	95	50	100	750	1250 [@]
2033/34	100	95	50	100	850	1390 [@]

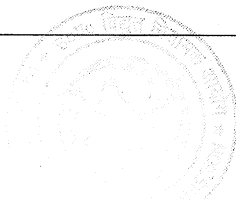
Note:

*This requirement is exclusive of the 100 MW of RE-RTC/FDRE capacity likely to be tied up by the utility as furnished.

@ Out of this around 90% may be met through of short-term / medium-term / market-based options and rest 10% may be sought through long-term firm tie-ups including options like bilateral /banking arrangements for the months of July to September.

25. It is observed that the cumulative source-wise capacity addition suggested by CEA till FY 2033-24 are 500 MW for Coal, 950MW for Wind, 500MW for RTC/FDRE, 600MW for Solar, 850MW for BESS and 1390 MW from STOA. NPCL was repeatedly asked to provide its year-wise and source-wise contracted capacity vis-à-vis CEA's recommendation, but it has failed to furnish the same. However, it is found that out of the source-wise recommended capacity, NPCL has only tied up long-term capacity of 300 MW hybrid, whose SCOD is FY 2026-27. Apart from its existing long-term and medium-term contracts, any further shortfall is being met by short-term power procurement. Further, it is relevant to note that the Commission, vide its various orders in Petition filed by NPCL, had approved short-term power procurement of NPCL for the FY 2026-27. The details of such short-term power procurement, as approved vide its various Orders, are summarized below:

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S. No.	Petition No.	Date of Order	Source of Power	Capacity (MW)	Tariff (Rs./kWh)	Procurement Period
1	2279/2025	11.12.2025	Hydro (RTC)	20	5.39	August 2026
				15	5.39	
				20	5.39	Sept-2026
				15	5.39	
				20	5.35	Oct-2026
				15	5.35	
2	2289/2025	27.01.2026	Coal (RTC)	40	5.80	April-2026
				40	5.89	May-2026
				40	5.87	June-2026
				40	5.10	July-2026
				40	5.10	August-2026
				40	5.10	Sept.-2026
			Coal (Peak)	25	5.15	Oct.-2026
				25	9.05	August-2026
				25	9.01	Sept-2026
3	2291/2025	06.01.2026	Solar	50	3.15	April-Sept. 2026
4	2297/2025	31.12.2025	Coal (Peak Power)	20	9.31	April-2026
				20	9.41	May-2026
				30	9.47	June-2026
				40	9.13	July-2026
				30	9.05	August-2026
				30	9.01	Sept.-2026
5	2313/2025	20.03.2026	Coal (RTC)	35	5.48	April-2026
				12	5.85	May-2026
				28	5.84	June-2026
				40	5.08	July-2026
				30	5.10	Sept.-26
			Peak Power	10	8.70	April-2026
				10	8.70	
				10	8.70	May-2026
				10	8.70	June-26
				10	8.70	
6	2325/2025	20.03.2026	Bagasse (RTC)	12.5	5.8	April-June 2026
7	2339/2026	22.04.2026	Biomass	14	5.49	June-2026
			Wind	6	5.49	
			Hydro	15	5.49	
			Wind	65	5.50	July-2026
			Biomass	14	5.22	
			Hydro	25	5.22	
			Wind	6	5.22	August-2026
			Biomass	14	5.22	
			Hydro	25	5.22	
Wind	6	5.22				

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			Biomass	14	5.22	Sept.-2026	
			Hydro	25	5.22		
			Wind	6	5.22		
8	2341/2026	20.03.2026	RTC Power	27	5.75	April-2026	
				15	5.20	June-2026	
				35	5.20		
				24	5.11	July-2026	
				35	4.93		
				41	4.93		
				30	5.25	August-2026	
				50	5.00		
				35	5.25	Sept.-2026	
				45	5.00		
				Coal (Peak Power)	5	9.09	July-2026
					15	9.09	Sept.-2026

*RTC Power- 00:00 to 24:00 Hrs., Peak Power- 18:00 to 24:00 Hrs.

26. It is observed that NPCL's existing long-term power contracts works out to be 631 MW wherein hybrid power of 300MW (Wind & Solar) already contributes towards 48% while coal contribution is 27%. Further, there is one medium-term contract of 95 MW coal-based power (Source: JITPL), which is going to expire in March 2029. The details of different long-term capacity are reproduced below:

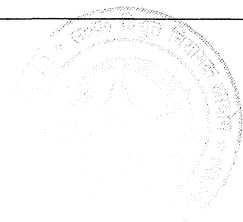
S. No.	Developer/Company Name	Source	Capacity (MW)	Percentage (%)
1.	Dhariwal Infrastructure Ltd.	Coal	171	27%
2.	SJVN Ltd.	FDRE	100**	16%
3.	Deshraj Solar Energy Power Ltd.	Hybrid	300*	48%
4.	Adani Solar Energy Chitrakoot One Ltd.	Solar	25	4%
5.	Tata Power Renewable Energy Ltd.	Solar	25	4%
6.	PTC India Ltd.	Wind	10	2%
	Total (MW)		631	100%

**Hybrid (Wind: Solar) SCOD: FY2026-27

*SCOD: FY2027-28

27. Even after procuring 1173 MU of energy from proposed 300MW hybrid power, it would not suffice for meeting NPCL's energy requirement and still there will be a substantial energy deficit i.e., 2750MU (in FY 2028-29), which further increases in coming years. Therefore, it would be prudent to procure energy from power sources, which could provide more energy in comparison to this hybrid power. The energy scenario for NPCL is worked out as below:

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Particulars		FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32
Energy Requirement (MU)	A	5,209	5,820	6,508	7,228	7,961	8,684
Existing Contract (MU)	B	3,749	4,450	3,758	3,100	3,100	3,100
Energy Deficit (MU)	C= A-B	1460	1370	2750	4128	4861	5584
Energy from Proposed Hybrid (MU)*	D	-	-	1,173	1,173	1,173	1,173
Energy Deficit with Proposed contracts (MU)	E= D-C	-1460	-1370	-2750	-4128	-4861	-5584
RPO/RCO Targets*	F	35.95%	38.81%	41.36%	43.33%	43.33%	43.33%
Energy Requirement for meeting RPO (MU)	G= A*F	1872.64	2258.74	2691.71	3131.89	3449.50	3762.78
Energy Requirement from non-RPO (MU)	H= A-G	3336.36	3561.26	3816.29	4096.11	4511.50	4921.22

*Based on NPCL claims

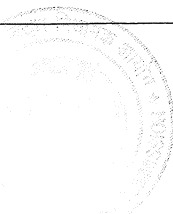
28. Regarding RPO/RCO requirement by NPCL. The MoP vide its notification dated 27.09.2025 has provided the source-wise RPO/RCO targets for the distribution licensee in terms of the following:

"2. The specified minimum share of electricity, referred to in first paragraph, from renewable energy sources as percentage of total electrical energy consumption (hereinafter referred to as the Renewable Consumption Obligation) for each category, shall be as per the details given in the Table below: -

TABLE

Sl. No.	Year	Wind energy	Hydro energy	Distributed renewable energy	Other renewable energy	Total renewable energy
(1)	(2)	(3)	(4)	(5)	(5)	(7)
1.	2024-25	0.67%	0.38%	1.50%	27.36%	29.91%
2.	2025-26	1.45%	1.22%	2.10%	28.24%	33.01%
3.	2026-27	1.97%	1.34%	2.70%	29.94%	35.95%
4.	2027-28	2.45%	1.42%	3.30%	31.64%	38.81%
5.	2028-29	2.95%	1.42%	3.90%	33.09%	41.36%
6.	2029-30	3.48%	1.33%	4.50%	34.02%	43.33%

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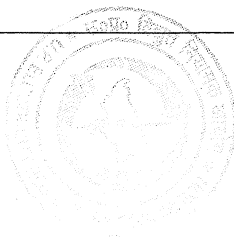


29. It is evident from the above table that the non-RPO energy requirement of NPCL throws significant numbers viz 3336 MU in FY 2026-27 which increases to 4921 MU in FY 2031-32. During FY 2028-29, non-RPO energy requirement would be 3816MU, in which the proposed hybrid plant is claimed to achieve its COD. Therefore, such significant requirement of energy is required to be fulfilled by some reliable source such as Coal-based power, FDRE (i.e., RE plus Storage system) etc.
30. Further, it is evident that NPCL's RPO/RCO compliance specially for Wind (31.42%) and total RE (47.80%) power during the FY 2028-29 would exceed significantly from the specified MoP's targets as provided in MoP notification dated 27.09.2025. NPCL's source-wise RPO/RCO status (*as claimed by NPCL*) after procuring this proposed 300MW hybrid power would be as below:

Sl. No.	Year	Wind energy	Hydro energy	Others RE	Total RE	Distributed RE
		A	B	C	D=A+B+C	E
1.	2026-27	0.00%	0.00%	9.14%	9.14%	1.82%
2.	2027-28	20.93%	0.00%	12.29%	33.21%	1.88%
3.	2028-29	31.42%	0.00%	16.38%	47.80%	1.91%
4.	2029-30	28.29%	0.00%	14.75%	43.04%	1.92%

31. The Commission finds that while comparing this proposed hybrid power with other sources of available power, NPCL has assumed abrupt parameters like CUF of Wind power to be just 24%, which is difficult to consider because even CEA has considered it to be 40% in its RAP study. The PLF of coal-based power plant was assumed by NPCL to be 75% at one instance while 100% at the other while justifying hybrid power over coal-based thermal power, which is also hypothetical because, generally it is 85%. Regarding Hydroelectric power, based on the NPCL's submission, it is very clear that NPCL is deferring such hydro power procurement because of its associated risk. It is also noticed that NPCL has erroneously claimed FDRE tariff to be Rs. 4.85/unit through its submissions filed on 23.01.2026 & 05.05.2026. In this regard, it is noteworthy to mention that the Commission, vide its Order dated 26.09.2024 in Petition No. 2099 of 2024, had approved 100 MW FDRE power (CUF of 75%) procurement for NPCL at the tariff of Rs. 4.38/kWh. Further, vide Order dated 12.01.2026 in Petition No. 2227 of 2025, tariff of Rs. 4.25/kWh was approved for FDRE power for UPPCL. Accordingly, the claim of NPCL with respect to FDRE tariff is found to be overstated.

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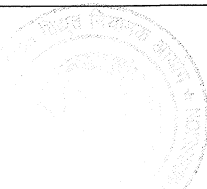
32. It also requires mention that NPCL is lagging in its capacity contract vis-a-vis figures finalized in RAP by CEA in consultation with NPCL. During the FY 2026-27, it is evident from the short-term power procurement approval that NPCL has tied up majorly from coal-based power and that too at higher tariff to meet its peak season & peak hour demand. Therefore, NPCL should reconsider its decision for procuring coal power on a medium term rather it should proceed for long-term as suggested by the CEA as well. Further, as far as 80 MW BESS at NPCL's end is concerned, the same should ideally be utilized by NPCL to manage its peak demand variation as well as for handling variability of its existing tied up RE capacity including 300MW hybrid power already approved by the Commission, vide Order dated 08.07.2025 in Petition No. 2183 of 2025. It is also imperative to mention that NPCL filed Petition No. 2183 of 2025 after the completion of the bidding process stating that sought deviations were already approved by the Government of Uttar Pradesh, as per the Guidelines.

33. It is an admitted fact that 100 MW Solar power component of this proposed 300MW hybrid power would not be available during the night hours (i.e., non-solar hours) and only 200MW Wind component would be available. Also, out of 300MW hybrid power contracted capacity, only 136MW of Average power would be available at NPCL bus. Accordingly, from contracted 600MW of hybrid power (CUF of 48%) only 272 MW of Average power would be available for NPCL on an annual basis. Therefore, even after procuring this hybrid power during FY 2028-29, there will be an average power deficit of 122MW (258-136) for NPCL. So, in order to meet its Peak and Average power deficit such hybrid power would not be sufficient.

Financial Year	Average Demand (MW)	Peak demand (MW)	Existing Contract (MW)	Peak Contract (MW)	Average Deficit (MW)	Peak Deficit (MW)
	A	B	C	D	E=C-A	F=D-B
2026-27*	595	973	349	349	-245	-624
2027-28*	664	1093	349	349	-315	-744
2028-29	743	1228	485	468	-258	-760
2029-30	825	1371	397	380	-429	-991
2030-31	909	1517	397	380	-512	-1138
2031-32	991	1663	397	380	-595	-1284
2032-33	1078	1817	397	380	-681	-1438
2033-34	1167	1978	397	380	-770	-1598

*As claimed by NPCL in Petition No. 2183 of 2025

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34. NPCL has failed to provide justification for the proposed hybrid power procurement because on the one hand NPCL claims its power projections based on the CEA's RAP report but on the other hand NPCL submits that CEA's recommendation would lead to a surplus of 17%. Even after providing sufficient opportunity, NPCL has not been able to justify its claim. Further, if procuring 300 MW hybrid power i.e., 200 MW Wind & 100 MW Solar (same ratio as claimed by NPCL), the effective tariff would be approx. Rs. 3.42/kWh in terms of industry practice. The detailed work out is elaborated as under:

Type of Power	MW	MU	Rs. /kWh	Cr.
(1)	(2)	(3)	(4)	(5)
Solar (@CUF of 24%)	100	210	2.56^	53.86
Wind (@CUF of 40%)	200	701	3.69*	258.77
Total		911		312.63
Effective Tariff = (5)/(3)	300		3.42	

^Discovered tariff of Solar in UPPCL's 2000MW bid (e-RA held on 03.01.2025).

*Discovered tariff of SECI's 1200MW Wind Bid (e-RA held on 04.02.2026).

35.As per Ministry of Power notified "Guidelines for Resource Adequacy Planning Framework for India" dated 28.06.2023, the share of long-term contract is suggested to be in the range of 70-80% while medium-term contracts suggested to be in the range of 10-20% and the rest to be met from the short-term contracts. However, it is evident that NPCL lags in long-term capacity contracts. Further, there exists a contract gap in the NPCL's procurement especially for coal-based power and FDRE in comparison to CEA's suggested capacity to be contracted.

36.NPCL's industrial load is likely to further increase intrinsically, which is further going to gallop with the operationalization of Jewar Airport and skewed dependence on intermittent RE is hardly conducive for a distribution business with so much industrial load in the consumer mix. The Commission appreciates and understands that RE power is environmental friendly but the same cannot be done while jettisoning the cost of firm power sources such as hydro and Coal based power. NPCL's existing long-term contracts contribute to only 27% thorough coal-based power. The Commission understands that Coal based power may have certain challenges like coal linkage etc. however, looking at the NPCL's power portfolio approximately 500 MW is required from firm sources on long-term basis and hence immediate steps should be taken towards that.

37. Thus, it appears that proposed hybrid power procurement may not be optimum both in terms of cost and CEA's recommendations and NPCL need to diversify its power

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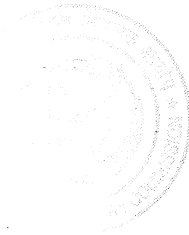
procurement plan to cater to its growing energy and power requirement from power sources which are reliable and firm especially for long-term period. Such firm power will support NPCL in meeting not only its base load but also its peak season and peak hours requirement thus minimizing short-term procurement as observed at para 25 of this Order. It is worthwhile pointing out that under this hybrid power, even Solar power will be supplied at the tariff of say Rs. 3.84/unit vis-a-vis standalone Solar, which is nowadays available at approx. Rs. 2.50/kWh- Rs. 2.70/kWh.

38. In view of above facts, the distribution licensee i.e., NPCL is directed to contract power quantum on long term basis from resources which are either Coal (since licensee is less intended for hydro) or firm RE power on RTC basis. However, NPCL is allowed to procure other RE power on medium-term basis as per the requirement that suits its load demand. Accordingly, the present proposal of hybrid power procurement is not accepted for long-term and NPCL management can accordingly think through its power procurement plan.

The Petition stands disposed of in terms of above.

(Sanjay Kumar Singh)
Member

(Arvind Kumar)
Chairman



Place: Lucknow
Dated: 24.06.2026