



ANALYSIS OF
AGGREGATE REVENUE
REQUIREMENT AND BULK SUPPLY
PRICE PROPOSAL OF GRIDCO FOR
FY 2022-23

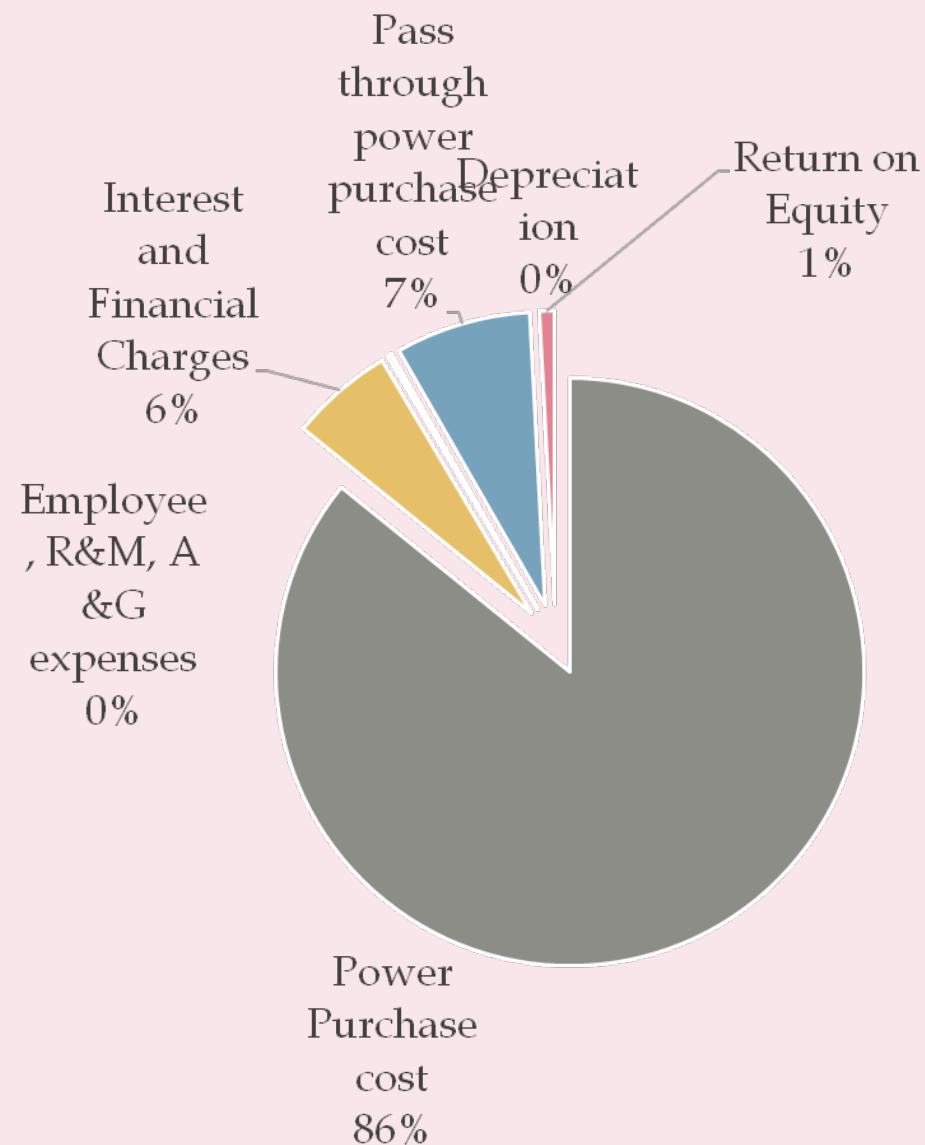
By

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(Consumer Counsel)
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Proposed Revenue Requirement FY 2022-23 (Rs. Crore)



Particulars	Amount (Rs Crore)
Power purchase cost (net)	9,431.04
Pass through power purchase cost	816.90
Interest cost	623.69
Employee cost	15.09
Repair & Maintenance	0.85
Administrative and General Expenses	7.50
Depreciation	1.02
Return on Equity	92.27
ARR	10,988.36
Less Revenue from Emergency sales	43.00
Net ARR	10,945.36



Energy Demand Projection

FY 2022-23 (MU)



DISCOM Utilities	Actual from April' 2021 to Sept' 2021	Projection for FY 2021-22	OERC approval of energy requirement during FY 2021-22	GRIDCO's projection based on energy projection given by DISCOM for FY 2022-23
TPCODL	4,840	8,978	9,290	9,271
TPNODL	2,785	5,524	5,880	5,973
TPSODL	2,019	3,906	4,100	4,170
TPWODL	4,552	8,600	8,600	9,000
TOTAL DISCOMs	14,196	27,008	27,870	28,414
NALCO & IMFA	47	60	60	60
TOTAL SALE	14,243	27,068	27,930	28,474

- Projected Energy sale in FY 2021-22, is **less** than approved sale (862 MU).
- Projected rise in energy sale in FY 2022-23 as compared to projected sale in FY 2021-22 is **minimal** (5.19%). The projection may be reviewed with respect DISCOM submission.
- TPNODL projected highest increase in sale of 8.12%, followed by TPSODL (6.75%) w.r.t. projected sale of FY 2021-22.
- Projected drawl by NALCO and IMFA is 60 MU as per approval of FY 2021-22.

Energy Requirement and Availability (MU)



AGENCY	OERC Approval FY 2020-21	OERC Approval FY 2021-22	GRIDCO Proposal for FY 2022-23
TPCODL	9470	9,290	9,271
TPNODL	6570	5,880	5,973
TPSODL	4050	4,100	4,170
TPWODL	8000	8,600	9,000
Total DISCOMS	28090	27,870	28,414
NALCO & IMFA	60	60	60
Total sale	28150	27,930	28,474
Transmission loss	868.76 (3%)	861.96 (3%)	880.64 (3%)
Energy Requirement	29081.76	28791.96	29,354.67

Stations	OERC approval FY 20-21	OERC approval for FY 21-22	Proposal for FY 22-23
OHPC(Old)	3676.86	3676.86	3452.36
Indravati	1942.38	1942.38	1703.79
Machhkund	262.50	262.50	259.88
Total State hydro	5881.74	5881.74	5416.03
OPGC (1& 2)	2743.56	2726.34	2597.99
OPGC (3& 4)	4631.78	4208.22	6919.90
TTPS	3254.22		
Small Hydro	385.00	458.35	456.35
Biomass	80.00	80	80
Wind Energy	752.80	685	975.87
Solar Energy	1019.00	1479	1800
IPPs	6230.85	4847.48	4298.7
Total State availability	24978.95	20366.13	22544.84
TSTPS Stg.-I	1509.01	2158.2	2175.82
TSTPS Stg.-II	1360.52	1346	1317.38
FSTPS-I&II			39.34
FSTPS-III			503.27
KhSTPS Stg.-I			27.67
KhSTPS Stg.-II			266.97
Barh-STPS-I			1937.72
Darlipali STPS 1		3694.69	6356.29
Total Central Thermal	2869.53	7198.89	12624.47
Chukha	259.48	255.43	267
TALA	130.80	124.69	126
Teesta	510.00	504.57	506
Mangdechhu	270.00	342.26	323
Total Central Hydro	1170.28	1226.94	1222
Total EREB	4039.81	8425.83	13846.47
Total Availability	29018.76	28791.96	36,391.31

Energy Availability

FY 2022-23



- **OHPC:** Proposed as per the generation plan submitted by OHPC and the present lower reservoir level of different stations – ~8% lower availability than last year approved; actual drawal for FY 20-21: 6241.35 MU.
- **OPGC: U # 1&2:** Projected **PLF @79.2%** on the basis of generation plan submitted by OPGC- 128 MU less is proposed. **U# 3&4:** 75% of contracted capacity, considering aux. consumption of 6.25% and PLF @85.1%.
- **IPPs** - 11% reduction in energy availability proposed; actual drawal in April-Sept 2021 is around 47% of total approved. State entitlement should be considered.
- **Central Thermal :** PLF in the range of 56.21-85.47% is projected – additional power to be sold in open market. Non approved sources should not be considered.
- No energy procurement proposed by GRIDCO from co-generation and captive projects.
- **Wind and solar** availability increase by 611 MU due to additional availability through SECI under ISTS-connected Projects.

RPO Status

FY 2022-23

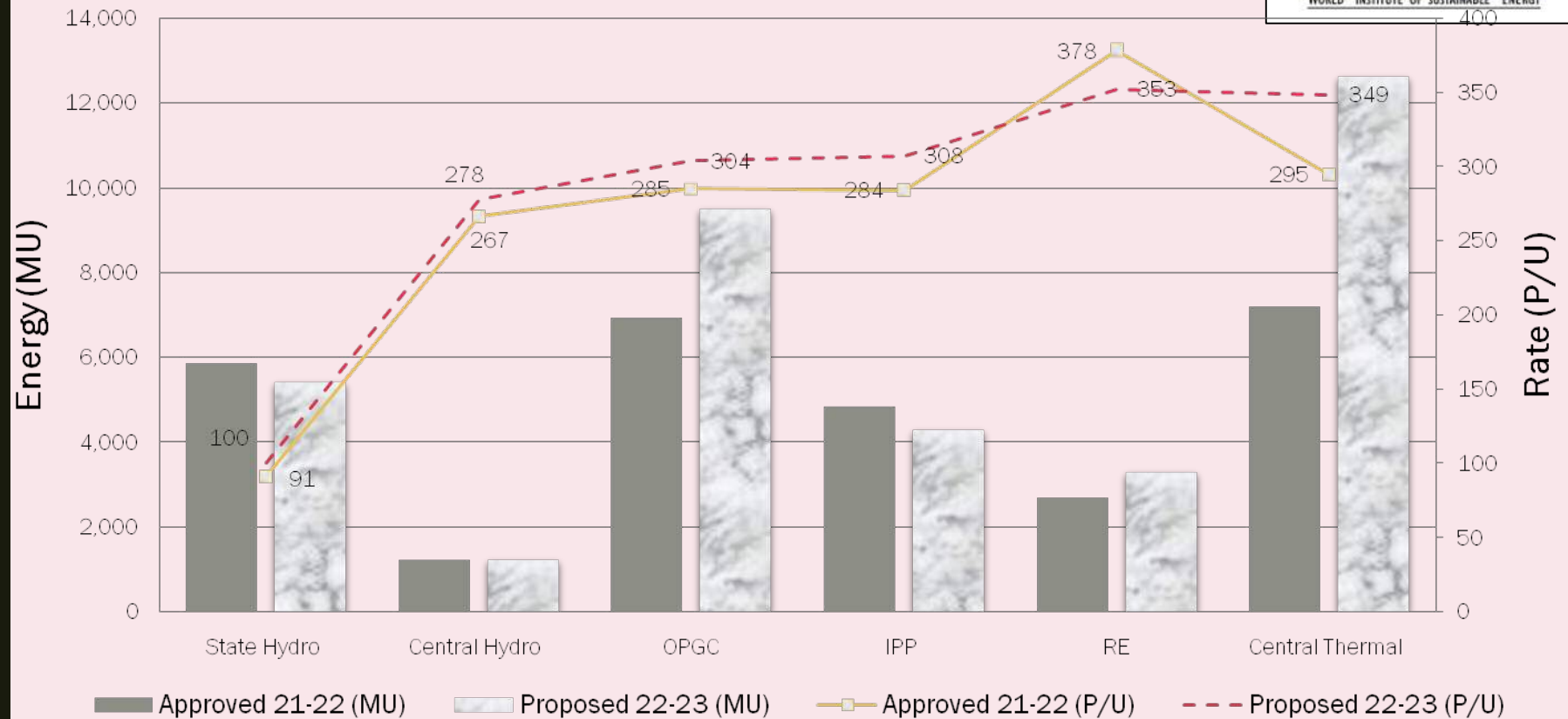


- Increase in overall RE purchase – 609.87 MU in FY 2022-23
- Biomass availability (80MU) needs to be verified based on actual energy (50.58 MU in 6 months of FY 21-22).
- Status of new SHP projects to be installed during FY 22-23 should be verified.
- Details of HPO compliance has not been provided.
- RPO compliance - Short fall for the earlier years' RPO to be considered.

Particulars	RPO Target (On Proposed Sale of 28474 MU to DISCOMs & NALCO, IMFA)		Renewable Energy proposed by GRIDCO for FY 2022-23
	Percentage (%)	Quantum (MU)	Quantum (MU)
A. Solar Energy	8.00	2277.92	1800.00
B. Non-Solar Energy (Bio Mass, SHEP & Wind)	6.15	1751.15	1512.22
Total	14.15 *	4029.07	3312.22

* RPO Target is 14.5%, including HPO of 0.35%

Power Purchase Cost



- Total energy availability of 36391.31 MU (@315.04 P/U) in FY 2022-23 against FY 21-22 approval of 28791.96 MU (@278.06 P/U).
- All power purchase rates are increased except RE from last year approved.
- Proposed power purchase rate - increase in case of central thermal (18.3%) and state hydro (9.7%).
- Around 37 P/U increase (13.2%) proposed in power purchase rate from FY 21-22 approved.

OHPC and OPGC Observations and Submissions



- OHPC should be as per approval given to OHPC stations.
- **OPGC (U # 1&2)** AFC as approved along with ECR of 152.81 P/U and Year End charges of Rs 0.25/kWh.
- GRIDCO has considered the same as per approved order.
- **OPGC U # 3&4:** Its tariff is yet to be determined. GRIDCO proposes provisional rate of 309 P/U. The Commission allowed the provisional tariff in the last year order.
- Year end charges may suitably determined.

	Generators		OPGC (unit 1 to 4)
GRIDCO Proposal 21-22	Energy	MU	8426.55
	Rate	P/U	298
OERC Approval 21-22	Energy	MU	6934.56
	Rate	P/U	285.2
GRIDCO Proposed 2022-23	Energy	MU	9517.89
	Rate	P/U	304.17

Central (Thermal) Projects

FY 2022-23



Generators	F.C		ECR		Yr.E.A. and Other Charges		Total Rate		% Increase (22-23 vs 21-22)
	(P/U)		(P/U)		(P/U)		(P/U)		
	21-22	22-23	21-22	22-23	21-22	22-23	21-22	22-23	
TSTPS Stg.-I	99.48	98.30	207.78	189.58	5.91	11.84	313.17	299.72	-4.3%
TSTPS Stg.-II	74.07	94.38	205.49	188.37	3.19	13.72	282.75	296.46	4.8%
FSTPS-I& II	176.25	131.93	282.70	303.51	0.61	20.59	459.56	456.02	-0.8%
FSTPS-III	239.09	198.36	276.22	298.03	0.13	11.56	515.44	507.96	-1.5%
KhSTPS-I	168.04	117.82	233.15	250.45	0.43	7.95	401.62	376.22	-6.3%
KhSTPS-II	174.62	96.30	220.59	237.59	0.12	1.99	395.33	335.88	-15.0%
Darlipalli TPS	175.20	208.04	109.05	100.41	4.13	1.54	288.38	309.99	7.5%
Barh-I		269.00		255.00		0.00		524.00	

- GRIDCO should try to minimize the procurement from costly CGSs. Power procurement cost related to central thermal projects may be allowed according to merit order norm only.
- Tariff orders as per CERC 2019 Regulations have not been issued, hence the fixed cost data as per petitions submitted by NTPC are referred. However, actual bill data should be considered.
- New stations of NTPC for which PPAs are not approved by OERC – should not be allowed. In FY 21-22, only cost related to TSTPS and Darlipalli was allowed.
- Transmission charges for PGCIL should be verified as per actual bill of FY 21-22.

Independent Power Producers

FY 2022-23



- **Vedanta:** The Commission in last year order provisionally considers the fixed cost of 95.67 P/U. The same may be continued.
- Energy charges of 185.91 P/U has been projected which is Sept-21 charges. The average ECR may be considered.
- **GKEL** cost should be based on final tariff order issued by CERC.
- Commission may consider ECR as arrived by considering price of firm linkage coal / SHAKTI coal only.
- Since IPPs energy costs are lower, the state entitlement should be assured.

			IPPs
GRIDCO Proposed 2021-22	Energy	MU	4800.00
	Rate	P/U	283.67
OERC Approval 2021-22	Energy	MU	4847.48
	Rate	P/U	284.25
GRIDCO Proposal 2022-23	Energy	MU	4298.70
	Rate	P/U	307.53

Renewable Energy



- What are the initiatives taken by GRIDCO to meet the solar RPO, basically the backlog? Financial provision for non compliance of RPO ?
- Rate of power purchase from wind and solar projected to be declined due to addition of cheaper new projects.
- Rates projected by GRIDCO should be verified based on approved / adopted rates and provisions of PPA.

	Generators		Small Hydro	Biomass Energy	Wind Energy	Solar Energy
GRIDCO Proposed 2021-22	Energy	MU	458.35	80	685	1479
	Rate	P/U	417.57	708	286.33	393.31
OERC Approval 2021-22	Energy	MU	458.35	80.00	685.00	1479.00
	Rate	P/U	417.57	708	286.33	391.00
GRIDCO Proposal 2022-23	Energy	MU	456.35	80.00	975.87	1800.00
	Rate	P/U	403.44	733	278.82	362.74

Power Purchase Cost : Trend (P/U)



Stations	Approved rate for FY 20-21	Approved rate for FY 21-22	Projected rate for FY 22-23	21-22 vs 20-21	22-23 VS 21-22
OHPC(Old)	91	89.93	98.26	-1.18%	9.26%
Indravati	92.14	88.06	102.8	-4.43%	16.74%
Machhkund	62.58	137.29	110.9	119.38%	-19.22%
Total State Hydro	90.11	91.42	100.3	1.45%	9.71%
OPGC	285.06	285.2	304.17	0.05%	6.65%
Small Hydro	381.43	417.57	403.44	9.47%	-3.38%
Biomass Energy	578	708	733	22.49%	3.53%
Wind Energy	287.08	286.33	278.82	-0.26%	-2.62%
Solar Energy	448.24	391	362.74	-12.77%	-7.23%
IPPs	257.21	284.25	307.53	10.51%	8.19%
Total State	248.09	241.37	262.94	-2.71%	8.94%
TSTPS Stg.-I	312.9	313.16	299.72	0.08%	-4.29%
TSTPS Stg.-II	285.07	282.75	296.46	-0.81%	4.85%
FSTPS-I&II			456.05		
FSTPS-III			507.95		
KhSTPS Stg.-I			375.89		
KhSTPS Stg.-II			335.84		
Barh-STPS-I			524		
Darlipali		288.37	307.99		6.80%
Central Thermal	323.32	294.75	348.7	-8.84%	18.30%
Chukha	246.07	249.1	248.22	1.23%	-0.35%
TALA	221.31	224.04	234.62	1.23%	4.72%
Teesta	238.7	172.13	205.33	-27.89%	19.29%
Mangdechhu	429.3	434.6	433.06	1.23%	-0.35%
Central Hydro	282.37	266.65	277.91	-5.57%	4.22%
Total EREB	311.46	290.66	342.45	-6.68%	17.82%
GRAND TOTAL	278.57	278.06	293.19/315.04	-0.18%	13.30%

Special Appropriation

FY 2022-23 (Rs. Crore)



Particulars	Loan Repayment Dues	Interest Dues	Proposed special appropriation by GRIDCO
State Govt. Loan	120.00	476.38	
NTPC-GoO Special Bonds (Rs.1102.87 Crore)	818.81	671.37	
Sub-Total (A)	938.81	1147.75	Proposed to be deferred
Bank Loans & Inter Corporate Loan (OMC)	1380.21	-	
OHPC Securitized Dues	-		
Sub-Total(B)	1380.21		1380.21
Grand Total (A+B)	2319.02	1147.75	1380.21

- State Govt loan and NTPC bonds proposed to be deferred as per earlier orders.
- GRIDCO proposes to deduct margin earned from sale of surplus power (sale price minus variable charges) from the repayment liability for the year and allow the balance repayment amount in the following manner:
 - Allow as a part of the annual revenue requirement,
 - Allow a regulatory surcharge recovery as a percentage of bulk supply tariff, or
 - Allow as a regulatory asset with an amortisation in a defined period of 3 to 5 years, as the Hon'ble Commission deems fit
- Pass through of special appropriation towards bank loan, and inter-corporate loan - not to be considered as per decision of the Commission in earlier BSP orders.
- Revenue from trading of power and/or state government budgetary provision can be used

Pass through expenses FY 2022-23 (Rs Crore)



Particulars	Amount (Rs Cr.)
STU charges of other states for RE power, payment of GST and safeguard duty due to change in law	66.96
Small Hydro (OPCL Biribati & Kendupatana)	1.52
Central Hydro (Teesta-V)	11.56
Central Hydro (Tala)	0.48
Differential pass through of NTPC Stations for the period Apr'21 to Sept'21	580.71
Ms. GKEL (arrear dues)	114.11
Year End Charges to M/s.Vedanta Ltd and M/s. GKEL	41.56
Total	816.90

- As per para 322 of FY 21-22 order: “Further, the FY 2020-21 has not yet been completed and GRIDCO has forecasted the differential power purchase cost for the whole year by prorating the actual for the first 6 months of the year 2020-21. Therefore, the Commission do not consider the proposal of GRIDCO to pass through the forecasted differential power purchase cost of Rs. 716.60 Crore in the ARR of FY 2021-22. This will be considered in the truing up exercise of GRIDCO.”
- Claim made for IPP: should be reviewed based on claimed amount and actual payment made.

Interest Financing and Other Exp. FY 2022-23 (Rs. Crore)



	Approved FY 2020-21	Approved 21-22	Proposed 22-23	% Increase 21-22 vs 20- 21	% Increase 22-23 vs 21- 22
1. Interest & Financial Charges	84.07	75.20	623.69	-10.55%	729.38%
2. Other Costs:					
a. Employee Cost	10.28	11.42	15.09	11.09%	32.14%
b. A&G Cost	5.26	5.42	7.5	3.04%	38.38%
c. Repair & Maintenance Cost	0.25	0.7	0.85	180.00%	21.43%
Sub-Total	15.79	17.54	23.44	11.08%	33.64%
3. Depreciation	1.03	1.33	1.02	29.13%	-23.31%
4. ROE			92.27		
Total (1+2+3)	100.89	94.07	740.42	-6.76%	787.09%

- Interest impact of loans availed by GRIDCO from FY 16-17 onwards should not be allowed as per the decisions of the Commission in earlier orders.
- Para 338 of FY 21-22: *“The commission in earlier orders have observed that there is no need for GRIDCO to borrow further from banks, if it is able to collect the approved revenue from DISCOMs. The inability of GRIDCO to collect such revenue has landed GRIDCO in a situation of borrowing from banks.”* – the same methodology may be followed.
- Reasons for substantial increase in other costs may be scrutinized.

ARR Analysis of GRIDCO

FY 2022-23 (Rs.Crore)



Particulars	Approved 20-21	Approved 21-22	Proposed 22-23	% Increase 21-22 vs 20-21	% Increase 22-23 vs 21- 22
Power Purchase cost	8083.74	8005.77	9,431.04 *	-0.96%	17.80%
Interest and Financial Charges, Depreciation and Other cost	100.89	94.07	648.15	-6.76%	589.01%
Return on Equity			92.27		
Pass through expenses and Special Appropriation	132.05	190.15	816.90	44.00%	329.61%
Gross Revenue Requirement	8316.68	8289.99	10988.36	-0.32%	32.55%
Less: (i) Miscellaneous Receipt NALCO & IMFA	42.30	44.52	43.00	5.25%	-3.41%
Less: (ii) Revenue earning from trading & receipt from CPSU under MOP	175.59				
Net Revenue Requirement to be recovered from DISCOMs	8098.79	8245.47	10945.36	1.81%	32.74%
Expected Revenue Receipts from DISCOMs at Current BSP	7848.19	8257.57	8431.24	5.22%	2.10%
Gap (+)/(-)	-250.60	12.10	-2514.12	-104.83%	-20877.85%

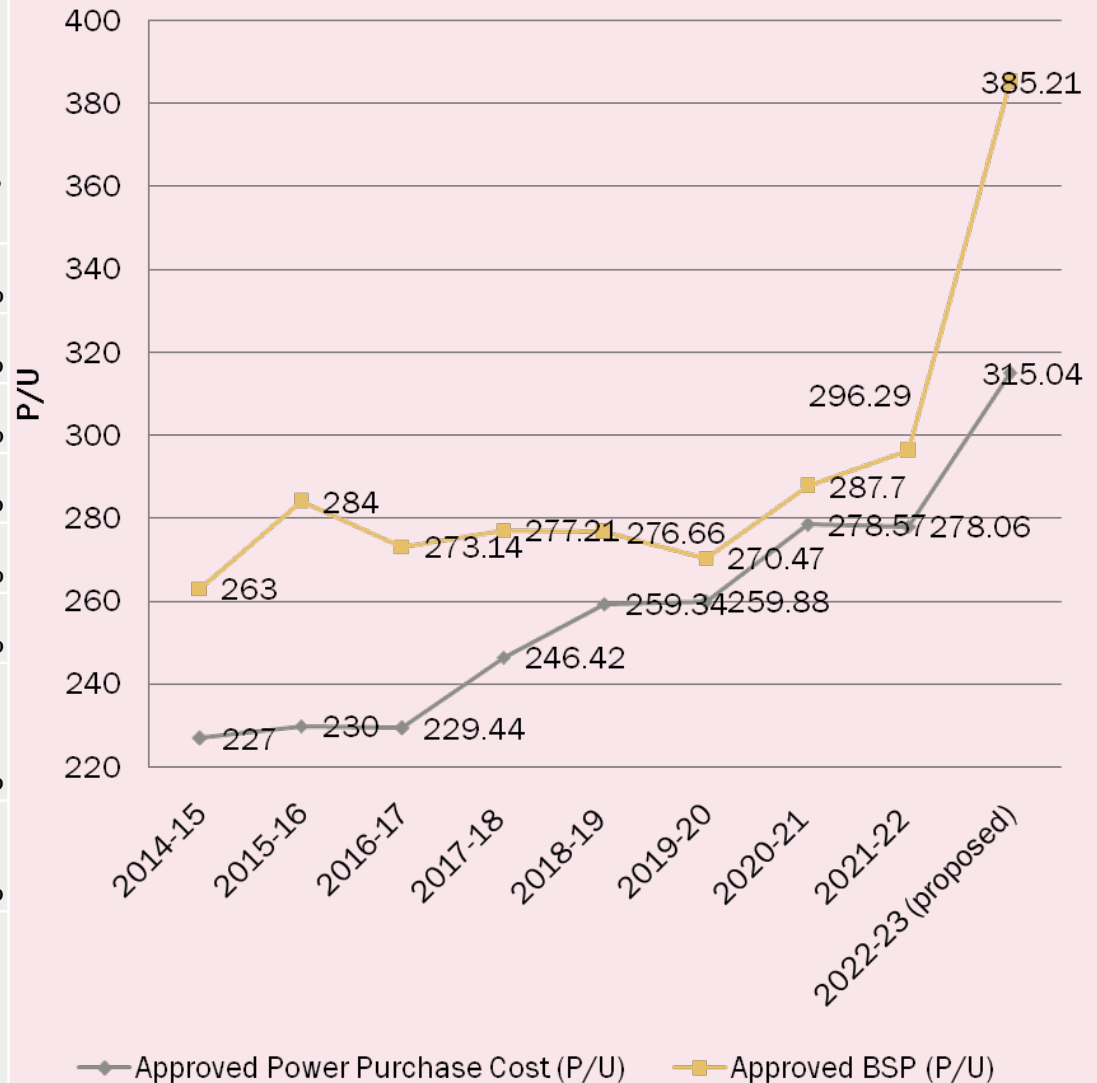
*Net expenses after considering surplus energy sale

Power Purchase Cost vs BSP

FY 2022-23



	Approved Power Purchase Cost (P/U)	Approved BSP (P/U)	PPC % Increase	BSP % Increase
2014-15	227	263	-0.87%	-0.75%
2015-16	230	284	1.32%	7.98%
2016-17	229.44	273.14	-0.24%	-3.82%
2017-18	246.42	277.21	7.40%	1.49%
2018-19	259.34	276.66	5.24%	-0.20%
2019-20	259.88	270.47	0.21%	-2.24%
2020-21	278.57	287.70 (revised)	7.19%	6.37%
2021-22	278.06	296.29	-0.18%	2.99%
2022-23 (proposed)	315.04	385.21	13.30%	30.01%



Proposed BSP for FY 2022-23



SL. NO.	COMPONENTS	Amount
		Rs. Crore
1	Net ARR to be recovered through BSP	10945.36
2	Units to be sold to DISCOMs Utilities (MU)	28414
3	Net Revenue to be recovered through sale of 28414 MU at existing average BSP	8431.24
4	Deficit Revenue at existing Average BSP	-2514.12
5	Proposed Average BSP to recover the Net Total Aggregate Revenue i.e. (ENERGY CHARGE ONLY) (P/U)	385.21

Impact of BST on Average Tariff FY 2022-23



Parameters	Value
Average cost of supply of Discoms (FY 21-22) (P/U)	548.4
Bulk supply tariff proposed by GRIDCO (FY 22-23) (P/U)	385.21
Sale to Discoms projected by GRIDCO (FY 22-23) (MU)	28414
Power purchase cost of Discoms at proposed BST (FY 22-23) (Rs crore)	10945.36
Distribution cost, Transmission cost and SLDC charges of Discoms (as per FY 21-22 approved) (Rs crore)	3779.99
Projected total cost of Discoms (FY 22-23) (Rs crore)	14725.35
Net saleable unit to consumers (FY 22-23) (MU)	22385.61
Projected Average cost of supply of Discoms at proposed BSP (FY 22-23) (P/U)	657.80
% increase in average cost of supply of Discoms	19.95%

Summary of observations

FY 2022-23



- Energy availability from all sources may be reviewed, particularly from IPPs and Central thermal. Costly power purchase should be avoided through merit order principle.
- Review of cost components of OPGC U#3&4 as per latest order.
- Review of all charges in case of Central thermal power plants. Fixed charges should be based on CERC orders only. As per earlier order, costs only from approved sources should be considered.
- Review transmission loss and transmission charges in case of Central sector projects.
- Power procurement quantum and rate for all IPPs may be reviewed.
- Substantial claim for special appropriation for principal repayment, which may not be allowed as per earlier orders of the OERC.
- Pass through expenses of power purchase cost of NTPC stations in FY 21-22 should not be part of projected ARR.
- Payment on account of interest on various loans may be reviewed and interest expenses of loan taken from FY 2016-17 onwards should not be allowed, as per earlier decision of the Commission.
- Employee cost, A&G expenses, and R&M expenses may be reviewed.
- Trading income of GRIDCO may be reviewed.



THANK YOU !