

Analysis of GRIDCO's ARR and Bulk Supply Price for FY 2013-14

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01 February, 2013

Proposal of GRIDCO

Energy Requirement

AGENCY	Approved by OERC for FY 2012-13 (MU)	GRIDCO Projection for FY 2013-14 (MU)
CESU	8236	8854
NESCO	5306	6100
WESCO	6496	6821
SOUTHCO	3047	3350
DISCOMS	23085	25125
TOTAL CGPs	100	100
TOTAL SALE	23185	25225
Transmission loss in OPTCL system	911.88 (@ 3.8%)	996.41 (@ 3.8%)
Energy Requirement	24096.88	26221.41

Energy availability

Stations	Approved for FY 2012-13 (MU)	Projection for FY 2013-14 (MU)
Total State hydro (incl. Machhkund)	5881.74	5843.36
OPGC	2890.82	2668.40
TTPS	2957.32	3210.00
Small Hydro Renewable Energy	300.00	300.00
Biomass Energy	122.00	120.00
Solar Energy	46.00	65.76
Co-generation Plants	665.76	1102.00
CGPs	696.10	1092.04
IPPs	3556.92	3859.11
Total State	17116.66	18260.67
TSTPS Stg.-I	2161.45	2154.56
TSTPS Stg.-II	1359.40	1342.41
FSTPS-I&II	1475.36	1470.75
FSTPS-III		1022.35
KhSTPS Stg.-I	846.86	841.56
KhSTPS Stg.-II	209.01	207.70
Total Central Thermal	6052.08	7039.33
Chukha	272.90	268.11
TALA	144.29	145.50
Teesta	510.95	507.81
Total Central Hydro	928.14	921.42
Total EREB	6980.22	7960.75
Total Availability	24096.88	26221.41

Proposed Revenue Requirement (FY 2013-14)

Item	Cost (Rs Crore)
Power Purchase Cost	6837.67
Pass through expenses and Special Appropriation	2090.00
Interest, Financing and other expenses	590.01
Return on Equity	67.11
Gross Revenue Requirement	9584.79

Largest component is Power purchase cost; in FY 12-13 (approved) it was 82% of net revenue requirement; proposed 20% increase in power purchase cost over last year's approval.

Analysis of ARR and BSP

Energy Mix

- Pre dominantly thermal dependency
- Share of thermal power purchase increased from 70% (12-13) to 72% (13-14) and hydro power purchase decreased from 28% (FY 12-13) to 26% (FY 13-14)

Energy Requirement (1/2)

Stations	Approved for FY 2011-12 (MU)	Approved for FY 2012-13 (MU)	Projection for FY 2013-14 (MU)	Growth in 12-13 over 11-12	Growth in 13-14 over 12-13
Total State hydro	5881.74	5881.74	5843.36	0.00%	-0.65%
OPGC	2892.49	2890.82	2668.4	-0.06%	-7.69%
TTPS	2957.32	2957.32	3210	0.00%	8.54%
Small Hydro	300	300	300	0.00%	0.00%
Biomass Energy	N.A.	122	120	N.A.	-1.64%
Solar Energy	N.A.	46	65.76	N.A.	42.96%
Co-generation Plants	512.46	665.76	1102	29.91%	65.53%
CGPs	603.79	696.1	1092.04	15.29%	56.88%
IPPs	3357.12	3556.92	3859.11	5.95%	8.50%
Total State	16504.92	17116.66	18260.67	3.71%	6.68%
TSTPS Stg.-I	2163	2161.45	2154.56	-0.07%	-0.32%
TSTPS Stg.-II	1360.38	1359.4	1342.41	-0.07%	-1.25%
FSTPS	1476.42	1475.36	2493.1	-0.07%	68.98%
KhSTPS Stg.-I	847.47	846.86	841.56	-0.07%	-0.63%
KhSTPS Stg.-II	209.16	209.01	207.7	-0.07%	-0.63%
Total Central Thermal	6056.43	6052.08	7039.33	-0.07%	16.31%
Chukha	273.36	272.9	268.11	-0.17%	-1.76%
TALA	143.16	144.29	145.5	0.79%	0.84%
Teesta	511.32	510.95	507.81	-0.07%	-0.61%
Total Central Hydro	927.84	928.14	921.42	0.03%	-0.72%
Total EREB	6984.27	6980.22	7960.75	-0.06%	14.05%
Total Availability	23489.19	24096.88	26221.42	2.59%	8.82%

Energy Requirement (2/2)

Observation and Submission:

- PLF of OPGC is projected as 80.14%; whereas approved PLF (for FY 12-13) was 86.82% based on OPGC generation plan.
- Energy availability to GRIDCO from Co-generation and Captive power projects can be reviewed.
- Energy availability from new IPPs should be verified based upon present stage of development. Power purchase from one new IPP has been proposed.
- Central transmission loss data should be verified based on new methodology.

RPO Status

	FY 2012-13		FY 2013-14	
	As per OERC Regulation	As Approved by OERC	As per OERC Regulation	As Proposed by GRIDCO
Solar	0.15%	0.19%	0.20%	0.25%
Non Solar	1.40%	1.75%	1.60%	1.60%
Co-gen	3.95%	2.76%	4.20%	4.20%

- Excess solar energy purchase of 13.32 MU (availability of 65.76 MU – RPO target of 52.44 MU) has been proposed by GRIDCO.
- Solar power purchase beyond solar RPO can be reviewed by Hon’ Commission.
- Energy availability from Co-generation power plants is increased by 65% as proposed by GRIDCO. In FY 2012-13, actual drawal from co-gen plants in first six months was 342.22 MU against approval of 665.76 MU for the whole year.
- Actual / realistic availability of co-gen power and their co-gen status may be verified.

Energy sale projection by GRIDCO

AGENCY	Actual drawal from April, 2012 to Sept,2012	Projection for 2012-13 on pro-rata basing on first six months drawal	OERC Approval for FY 2012-13	GRIDCO's Projection for FY 2013-14	% increase in FY 13-14 over approved for FY 12-13
CESU	3860.34	7720.68	8236	8854	7.50%
NESCO	2574.2	5148.4	5306	6100	14.96%
WESCO	3321.69	6643.38	6496	6821	5.00%
SOUTHCO	1464.82	2929.64	3047	3350	9.94%
TOTAL DISCOMS	11221.05	22442.10	23085	25125	8.84%
NALCO & IMFA	166	332	100	100	0.00%
TOTAL SALE	11387.05	22774.10	23185	25225	8.80%

GRIDCO is projecting to sale:

- 2040 MU more than last year's approved sale figure.
- 8.8% increase over approved total sale during FY 2012-13.
- Need to verify energy sale/ increase in consumer base of NESCO,SOUTHCO.¹¹

Power Purchase cost (FY 13-14)

- Purchased pattern: Hydro = 26%, Thermal = 72%, RE = 2%
- Energy availability of 26221.42 MU @ 260.77 P/U and total cost of Rs 6837.67 cr as against OERC approval for FY 12-13 of 24096.98 MU @ 236.17 P/U and cost of Rs 5691.02 cr.
- The power procurement from Co-gen, CGP and RE may be encouraged keeping in provisions under EA and NEP in mind.

TTPS and OPGC

Observation & Submission:

- TTPS: Fixed charges for TTPS shall be allowed as per earlier OERC order and CERC approved cost of Rs 214.40 crore (petition no 184/2009). Fixed charges as requested by GRIDCO shall not be allowed in ARR since the final order is not issued by CERC in petition no 304/2009.
- FPA may be calculated as escalation on average of 6 months data of FY 2012-13.
- OPGC: Proposed 13.14% increase in per unit cost over last year's approved i.e. from 195.14 P/U to 220.78 P/U. (Escalation in FY 12-13 was 8.88% over FY 11-12).
- Proposed fixed cost increases by Rs 8.88 crore.
- Variable and FPA cost escalation is 17%.
- Both costs may be reviewed

Central Generating Stations - Thermal

Generators	Fixed cost (P/U)		ECR (P/U)		Yr.E.A. (P/U)		Trans charges (P/U)		Total rate (P/U)		
	12-13	13-14	12-13	13-14	12-13	13-14	12-13	13-14	12-13	13-14	% change
TSTPS Stage -I	81.18	87.11	244.77	200.17	2.58	2.24	21.56	30.75	350.09	320.28	-8.51%
TSTPS Stage-II	81.04	82.12	244.77	199.46	2.3	2.95	21.56	30.75	349.67	315.28	-9.83%
FSTPS-I& II	80.71	88.08	384.67	386.5	1.95	1.78	21.56	30.75	488.89	507.11	3.73%
FSTPS-III		155.99		387.45		1.78		30.75	N.A.	575.98	
KhSTPS-I	94.49	102.15	311.85	303.47	1.62	0.11	21.56	30.75	429.52	436.48	1.62%
KhSTPS-II	119.1	125.47	294.37	287.69	0.14	1.35	21.56	30.75	435.15	445.27	2.33%

- Fixed cost: as per CERC approval in final and interim orders.
- Energy charges: 30% hike claim over first six month of FY 12-13 – need to be verified.
- Transmission charge: proposed 43% increase - needs review.
- Total rate: Overall increase of 3.82% (escalation in the range of 3.73% to (-) 9.83%).
- **Power purchase rate for FSTPS III (575.98 P/U) is second highest after solar PV power projects among all energy sources.**

CGP, Co-gen, IPP and RE (Solar)

Sources	2012-13 Approved			2013-14 proposed		
	MU	Rs crore	Rs/U	MU	Rs crore	Rs/U
Co-gen	665.76	188.42	2.83	1102.00	303.05	2.75
CGP	696.10	199.23	2.86	1092.04	300.31	2.75
CGP+ co-gen	1361.86	387.65	2.85	2194.04	603.36	2.75
IPP	3556.92	992.06	2.79	3859.11	1058.25	2.74

- Per unit Rate is reduced by 10 paisa / unit (CGP and Co-gen) and 5 paisa / unit (IPP).
- Co-gen and CGP : flat rate of 275 p /U with effect from 15.09.2012.
- OERC may determine power purchase rates for CGP and Co-gen power for FY 13-14, if required.
- Proposed purchase rates of IPPs should be reviewed considering the commissioning status and terms and conditions of PPA applicable to each IPP.
- Solar power available through NVVN: rate has been increased substantially; needs review.
- Status and PPA terms of 10 MW NTPC project and OREDA state scheme project need review.

Power Purchase cost trend (P / U)

Stations	Approved rate for FY 2011-12	Approved rate for FY 2012-13	Proposed Rate for FY 2013-14	% Increase in 12-13 over 11-12	% Increase in 13-14 over 12-13
State Hydro	65.96	68.83	70.67	4.35%	2.67%
OPGC	179.22	195.15	220.77	8.89%	13.13%
TTPS	180.5	179.87	249.61	-0.35%	38.77%
Small Hydro	320.32	368	368	14.89%	0.00%
Biomass Energy	N.A.	501	516		2.99%
Solar Energy	N.A.	517.52	1060.45		104.91%
Co-generation Plants	275	283.02	275	2.92%	-2.83%
CGPs	277.76	286.21	275	3.04%	-3.92%
IPPs	275	278.91	274.22	1.42%	-1.68%
Total State	167.71	179.71	203	7.16%	12.96%
TSTPS Stg.-I	294.27	328.53	320.28	11.64%	-2.51%
TSTPS Stg.-II	301.56	328.1	315.28	8.80%	-3.91%
FSTPS- I & II	417.14	467.33	507.11	12.03%	8.51%
FSTPS- III			575.98		
KhSTPS Stg.-I	318.82	407.96	436.48	27.96%	6.99%
KhSTPS Stg.-II	345.03	413.59	445.27	19.87%	7.66%
Total Central Thermal	331.05	376.32	413.08	13.67%	9.77%
Chukha	181.38	162.86	194.64	-10.21%	19.51%
TALA	206.97	206.9	238.96	-0.03%	15.50%
Teesta - V	172.17	214.44	260.4	24.55%	21.43%
Total Central Hydro	180.25	198.1	237.88	9.90%	20.08%
Total EREB	311.02	352.63	393.27	13.38%	11.52%
Total	210.32	236.17	260.77	12.29%	10.42%

Pass through & Special Appropriation

Particulars	Amount Rs. Crore
Proposed Pass Through Expenses	
· Outstanding Govt. Guarantee Commission	34.34
· Arrear payment to TTPS (Differential Fixed Charge, Interest thereon, FPA Revisions & Income Tax) (1/3 rd of total proposed as pass through)	227.62
· Arrear Payment to NTPC stations (April – Sept'2012)	59.53
Sub-Total of Pass Through Expenses	321.49
Special Appropriation	
· State Govt. Loans	320.41
· NTPC-GoO Special Bonds	551.44
· Pension Trust Bond	32.63
· Bank Loans	864.03
Sub Total : Special Appropriation	1768.51

- Arrear payments to TTPS should not be allowed as final order has not been issued.
- Payments towards State Govt loan and pension trust bond should not be allowed as per OERC's recommendations to GoO.
- Allow Rs 118.29 crore as special appropriation (including NTPC special bond) for FY 2013-14 as approved in the securitization order.
- Principal repayment as special appropriation - as per approved amount of loans decided in earlier ARR orders.

Interest, Financing & Other expenses (Rs crore)

	2011-12 Approved	2012-13 Approved	2013-14 Proposed	% increase 12- 13 over 11-12	% increase 13- 14 over 12-13
1. Interest & Financial Charges	326.64	414.49	580.17	26.90%	39.97%
2. Other Costs:					
a. Employee Cost	4.21	4.29	5.22	1.90%	21.68%
b. A&G Cost	2.83	3.73	3.77	31.80%	1.07%
c. ERLDC, NLDC fees, ULDC and SLDC scheduling Charges	1.32	1.32	N.A. (incl. in power purchase)	0.00%	
d. Repair & Maintenance Cost	0.00	0.10	0.50		400.00%
<i>Sub-Total - Other Costs</i>	<i>8.36</i>	<i>9.44</i>	<i>9.49</i>	<i>12.92%</i>	<i>0.53%</i>
3. Depreciation	0.00	0.00	0.35		
Total (1+2+3)	335.00	423.93	590.01	26.55%	39.09%

Submission:

- Interest on proposed new loan of Rs 1100 crore (Sl. no 41, 42, 43 in TRF-3) shall not be considered in this ARR calculation. Interest related to new loan taken in FY 11-12 and FY 12-13 should be reviewed.
- Reasons for substantial increase in Employee cost and R&M cost may be secutinized.
- Expenses towards depreciation and Return on equity may not be considered as per Govt directives and earlier OERC orders.

ARR analysis of GRIDCO

	OERC approval for 2011-12	OERC approval for 2012-13	GRIDCO's Proposal for 2013-14	% increase in 12-13 over 11-12	% increase in 13-14 over 12-13
Power Purchase Cost incl. ERDC fee	4940.30	5692.34	6837.67	15.22%	20.12%
Pass through expenses and Special Appropriation	741.62	904.69	2090.00	21.99%	131.02%
Interest, Financing and other expenses	335.00	422.61	590.01	26.15%	39.61%
Return on Equity	-	-	67.11		
Revenue Requirement	6016.92	7019.64	9584.79	16.67%	36.54%
Misc receipt	64.00	69.00	69.00	7.81%	0.00%
Net revenue requirement	5952.92	6950.64	9515.79	16.76%	36.91%
Expected revenue	5206.87	6250.06	6802.99	20.03%	8.85%
GAP	-746.05	-700.58	-2712.80	-6.09%	287.22%

Power purchase cost by GRIDCO vs. BSP

Growth of:	12-13 over 11-12	13-14 over 12-13
Average power purchase cost	12.32%	10.39%
Bulk supply price	16.87%	39.89%

Impact of BST on average tariff

Parameters	Value
Average cost of supply of Discoms (FY 12-13) (P/U)	460.51
Bulk supply tariff proposed by GRIDCO (FY 13-14) (P/U)	378.74
Sale to Discoms projected by GRIDCO (FY 13-14) (MU)	25125.00
Power purchase cost of Discoms at proposed BST (FY 13-14) (Rs crore)	9515.84
Distribution cost, Transmission cost and SLDC charges of Discoms (FY 12-13 approved) (Rs crore)	2115.99
Projected total cost of Discoms (FY 13-14) (Rs crore)	11631.83
Net saleable unit to consumers (FY 13-14) (MU)	19778.06
Projected Average cost of supply of Discoms at proposed BSP (FY 13-14) (P/U)	588.12
% increase in average cost of supply of Discoms	27.71%

Assumption: Over all distribution loss of CESU – 23%, NESCO – 18%, WESCO – 19.60% and SOUTCO – 25.50%

Summary

- Design of BSP for DISCOMs has direct impact on consumer tariff; therefore, the Hon. Commission may consider the following observation of Consumer Counsel related GRIDCO ARR:
 - Energy availability from all sources may be reviewed.
 - Review of fixed charges and YEA in case of TTPS.
 - Review of cost components of OPGC.
 - Review of all charges in case of Central thermal.
 - Review of transmission loss and transmission charges in case of Central sector projects.
 - Power procurement rate for all IPPs may be reviewed.
 - Power procurement rate for Co-gen and CGPs (for FY 13-14) may be determined.
 - Substantial claim against Pass through and special appropriation, which may be reviewed thoroughly.
 - Principal repayment of loans may be verified.
 - Interest on proposed new loan shall not be considered as pass through in the ARR.
 - Employee cost, A&G expenses and R&M expenses may be reviewed.
 - Depreciation and RoE shall not be allowed in the ARR.

Thank you