

PM KUSUM

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I. SCHEME:

Subject: Honourable state electricity regulatory commission (SERC) has issued a notice to the public vide O.P No.24 of 2020 to submit suggestions and comments for the pre-fixed levelized tariff determination.

Reference: Your letter No.TSERC/Secy/JD(TE)/T-Kusum/D.No.461/20 Dt.24.11.2020

Dear sir,

Component A of the scheme: Setting up of 10,000 Mega Watt decentralised Ground Mounted Grid Connected Solar Power plants of individual plant size from 500KW to 2MW.

Eligibility: Individual Farmers, group of Farmers, Farmer Cooperatives, Gram Panchayats, Farmer producer organizations, Water User Associations, preferably within 5 km radius of the sub-stations.

We are thankful to the honourable commission for coming forward with a proposed pre-fixed levelized tariff of Rs.3.13 per unit sale, to the Farmers. We would like to give our feedback as below based on your proposal.

1. We would like to thank you for proposing useful life of the plant as 25 years and the PPA accordingly for 25 years.
2. We would also like to thank you for considering the capital cost as Rs.3.60 crores per Mega Watt of DC capacity.

As per the capital cost of Rs.3.60 crores per megawatt

1. the debt part (70%) is Rs.2.52 crores. ROI is 10% per annum for 12 years
2. the equity part (30%) is Rs.1.08 crores. Farmer to invest or collaborate with investor partner

Note: As known, we the Farmers, struggle to get loans for the seeds, ploughing and sowing expenses, it will be an impossible task for us to invest equity. Hence, we have to have equity investing partner who will recover their money with interest or ask for share in the profit for whole of the plant life i.e 25 years.

The cash flow looks as below with debt and equity repayments as per the rate of interest proposed by you. We would like to bring to your honourable notice that, the below figures in **table 1**, as proposed by the honourable commission will not be viable to us. You can see the negative income or loss for the first 9 years.

Year	Generation units	Levelized Tariff	Revenue	Term Loan interest @10%	Term Loan Principal	Equity Principal	Equity interest@10%	O&M + Spares	Balance with Farmer
1	1652000	3.13	5170760	2520000	2100000	900000	1080000	517500	-1946740
2	1639610	3.13	5131979	2310000	2100000	900000	990000	538407	-1706428
3	1627313	3.13	5093490	2100000	2100000	900000	900000	560159	-1466669
4	1615108	3.13	5055288	1890000	2100000	900000	810000	582789	-1227501
5	1602995	3.13	5017374	1680000	2100000	900000	720000	608334	-988960
6	1590972	3.13	4979742	1470000	2100000	900000	630000	630830	-751088
7	1579040	3.13	4942395	1260000	2100000	900000	540000	656315	-513920
8	1567197	3.13	4905327	1050000	2100000	900000	450000	682830	-277503
9	1555443	3.13	4868537	840000	2100000	900000	360000	710417	-41880
10	1543777	3.13	4832022	630000	2100000	900000	270000	739117	192905
11	1532199	3.13	4795783	420000	2100000	900000	180000	768978	426805
12	1520708	3.13	4759816	210000	2100000	900000	90000	800044	659772
13	1509302	3.13	4724115	0	0	0	0	832366	3891749
14	1497983	3.13	4688687	0	0	0	0	865994	3822693
15	1486748	3.13	4653521	0	0	0	0	900980	3752541
16	1475597	3.13	4618619	0	0	0	0	937380	3681239
17	1464530	3.13	4583979	0	0	0	0	975250	3608729
18	1453546	3.13	4549599	0	0	0	0	1014650	3534949
19	1442644	3.13	4515476	0	0	0	0	1055642	3459834
20	1431825	3.13	4481612	0	0	0	0	1098290	3383322
21	1421086	3.13	4447999	0	0	0	0	1142661	3305338
22	1410428	3.13	4414640	0	0	0	0	1188824	3225816
23	1399850	3.13	4381531	0	0	0	0	1236853	3144678
24	1389351	3.13	4348669	0	0	0	0	1286821	3061848
25	1378931	3.13	4316054	0	0	0	0	1338809	2977245

II. SUBMISSIONS:

Looking at the above figures in table 1, we are sure, honourable commission would think of viable solution to help the poor farmers who work hard and produce the food for the country. Hence, we beg honourable commission to recommend the state and central governments to advise the financial institutions to lend interest free debt/term loan to PM-KUSUM scheme farmers by which the name "PM KISAN SURAKSHA EVAM UTHAN MAHABHIYAN" to be practical.

We have tried to demonstrate the figures in the below **table 2** to the honourable commission for necessary action. The subsidy may be re-imbursed on pro-rata basis of the plant construction work. The concerned competent authority of state/central government shall be certifying the work progress of the plant construction accordingly to release the subsidy.

Year	Generation units	Levelized Tariff	Revenue	Loan interest @10%	Loan Principal	Equity Principal	Equity interest@10 %	O&M + Spares	Land lease + Profit to Farmer
1	1652000	3.13	5170760	0	2100000	900000	1080000	517500	573260
2	1639610	3.13	5131979	0	2100000	900000	990000	538407	603572
3	1627313	3.13	5093490	0	2100000	900000	900000	560159	633331
4	1615108	3.13	5055288	0	2100000	900000	810000	582789	662499
5	1602995	3.13	5017374	0	2100000	900000	720000	606334	691040
6	1590972	3.13	4979742	0	2100000	900000	630000	630830	718912
7	1579040	3.13	4942395	0	2100000	900000	540000	656315	746080
8	1567197	3.13	4905327	0	2100000	900000	450000	682830	772497
9	1555443	3.13	4868537	0	2100000	900000	360000	710417	798120
10	1543777	3.13	4832022	0	2100000	900000	270000	739117	822905
11	1532199	3.13	4795783	0	2100000	900000	180000	768978	846805
12	1520708	3.13	4759816	0	2100000	900000	90000	800044	869772
13	1509302	3.13	4724115	0	0	0	0	832366	3891749
14	1497983	3.13	4688687	0	0	0	0	865994	3822693
15	1486748	3.13	4653521	0	0	0	0	900980	3752541
16	1475597	3.13	4618619	0	0	0	0	937380	3681239
17	1464530	3.13	4583979	0	0	0	0	975250	3608729
18	1453546	3.13	4549599	0	0	0	0	1014650	3534949
19	1442644	3.13	4515476	0	0	0	0	1055642	3459834
20	1431825	3.13	4481612	0	0	0	0	1098290	3383322
21	1421086	3.13	4447999	0	0	0	0	1142661	3305338
22	1410428	3.13	4414640	0	0	0	0	1188824	3225816
23	1399850	3.13	4381531	0	0	0	0	1236853	3144678
24	1389351	3.13	4348669	0	0	0	0	1286621	3061848
25	1378931	3.13	4316054	0	0	0	0	1338809	2977245

From the above table 2, honourable commission may see that there is no negative income or loss to us. Though the income from land due to the scheme launched by our Prime Minister, we are happy as usual with small profits which can take care of our lively hood for first 12 years, in anticipation of quality lively hood in the next 13 years. Moreover, it would be our privilege that we farmers can also produce power for the country which is equally important as food grains.

In case of honourable commission is not in a position to recommend interest free debt loan, we as farmers beg the honourable commission to recommend the state and central government to provide 30% subsidy similar to component B & C of this scheme as shown in table 3.

Further, it is our humble submission to honourable commission to split the proposed pre-fixed levelized tariff of Rs.3.13 in to phased pre-fixed levelized tariff of

1. Rs.3.51 per unit for the first phase, first 12 years term loan repayment period of 25-year PPA period proposed by honourable commission
2. Rs.2.75 per unit for the second phase of 13 years of 25-year PPA period proposed by honourable commission

The return of investment figures is shown in below **table 3** for your ready reference and oblige.

TABLE 3: WITH DEBT 70% @ 10% ROI & 30% SUBSIDY TO THE FARMER (Tariff: Rs.3.51 for 12 Years & Rs.2.75 for 13 Years)

Year	Generation units	Levelized Tariff	Revenue	Loan interest @10%	70% Loan Principal	30% Equity Principal	30% Equity interest@10%	O&M + Spares	Land lease + Profit to Farmer
1	1652000	3.51	5798520	2520000	2100000	Subsidy	0	517500	661020
2	1639610	3.51	5755031	2310000	2100000	Subsidy	0	538407	806624
3	1627313	3.51	5711869	2100000	2100000	Subsidy	0	560159	951710
4	1615108	3.51	5669029	1890000	2100000	Subsidy	0	582789	1096240
5	1602995	3.51	5626512	1680000	2100000	Subsidy	0	606334	1240178
6	1590972	3.51	5584312	1470000	2100000	Subsidy	0	630830	1383482
7	1579040	3.51	5542430	1260000	2100000	Subsidy	0	656315	1526115
8	1567197	3.51	5500861	1050000	2100000	Subsidy	0	682830	1668031
9	1555443	3.51	5459605	840000	2100000	Subsidy	0	710417	1809188
10	1543777	3.51	5418657	630000	2100000	Subsidy	0	739117	1949540
11	1532199	3.51	5378018	420000	2100000	Subsidy	0	768978	2089040
12	1520708	3.51	5337685	210000	2100000	Subsidy	0	800044	2227641
13	1509302	2.75	4150581	0	0	0	0	832366	3318215
14	1497983	2.75	4119453	0	0	0	0	865994	3253459
15	1486748	2.75	4088557	0	0	0	0	900980	3187577
16	1475597	2.75	4057892	0	0	0	0	937380	3120512
17	1464530	2.75	4027458	0	0	0	0	975250	3052208
18	1453546	2.75	3997252	0	0	0	0	1014650	2982602
19	1442644	2.75	3967271	0	0	0	0	1055642	2911629
20	1431825	2.75	3937519	0	0	0	0	1098290	2839229
21	1421086	2.75	3907987	0	0	0	0	1142661	2765326
22	1410428	2.75	3878677	0	0	0	0	1188824	2689853
23	1399850	2.75	3849588	0	0	0	0	1236853	2612735
24	1389351	2.75	3820715	0	0	0	0	1286821	2533894
25	1378931	2.75	3792060	0	0	0	0	1338809	2453251

If honourable commission can't assure of interest free term loan and 30% CFA, we request to consider the phased pre-fixed levelized tariff @Rs.4.25 per unit for term loan & equity loan repayment period of 12 years and pre-fixed levelized tariff @Rs.2.75 per unit for the next 13 years of 25-year PPA tenure as shown in **table 4** below.

TABLE 4: WITH DEBT 70% @ 10% ROI & 30% EQUITY BY THE FARMER (Tariff: Rs.4.25 for 12 Years & Rs.2.75 for 13 Years)

Years)									
Year	Generation units	Levelized Tariff	Revenue	Loan interest @10%	Loan Principal	Equity Principal	Equity interest@10%	O&M + Spares	Balance with Farmer
1	1652000	4.25	7021000	2520000	2100000	900000	1080000	517500	-96500
2	1639610	4.25	6968343	2310000	2100000	900000	990000	538407	129936
3	1627313	4.25	6916080	2100000	2100000	900000	900000	560159	355921
4	1615108	4.25	6864209	1890000	2100000	900000	810000	582789	581420
5	1602995	4.25	6812729	1680000	2100000	900000	720000	606334	806395
6	1590972	4.25	6761631	1470000	2100000	900000	630000	630830	1030801
7	1579040	4.25	6710920	1260000	2100000	900000	540000	656315	1254605
8	1567197	4.25	6660587	1050000	2100000	900000	450000	682830	1477757
9	1555443	4.25	6610633	840000	2100000	900000	360000	710417	1700216
10	1543777	4.25	6561052	630000	2100000	900000	270000	739117	1921935
11	1532199	4.25	6511846	420000	2100000	900000	180000	768978	2142868
12	1520708	4.25	6463009	210000	2100000	900000	90000	800044	2362965
13	1509302	2.75	4150581	0	0	0	0	832366	3318215
14	1497983	2.75	4119453	0	0	0	0	865994	3253459
15	1486748	2.75	4088557	0	0	0	0	900980	3187577
16	1475597	2.75	4057892	0	0	0	0	937380	3120512
17	1464530	2.75	4027458	0	0	0	0	975250	3052208
18	1453546	2.75	3997252	0	0	0	0	1014650	2982602
19	1442644	2.75	3967271	0	0	0	0	1055642	2911629
20	1431825	2.75	3937519	0	0	0	0	1098290	2839229
21	1421086	2.75	3907987	0	0	0	0	1142661	2765326
22	1410428	2.75	3878677	0	0	0	0	1188824	2689853
23	1399850	2.75	3849588	0	0	0	0	1236853	2612735
24	1389351	2.75	3820715	0	0	0	0	1286821	2533894
25	1378931	2.75	3792060	0	0	0	0	1338809	2453251

From the above **table 4**, it is evident that the first-year revenue is in negative, which require a 1-year moratorium for the term loan. To meet the cash out flow to the term loan and the equity investor, we request the honourable commission to continue phased pre-fixed levelized tariff with a change. The pre-fixed levelized tariff for phase-1 @ Rs.4.25 is for the 12 year term loan repayment period and phase 2 @Rs.2.75 for the post term loan payment period of 13 years.

We request honourable commission to look in to our above proposals/suggestions/options and consider for PM KUSUM scheme meant for the development and self-reliance of farmers.

III. CLARIFICATIONS REQUIRED:

1. Gross and net generation figures have been considered are same for 25 years as there will be a standard degradation of 0.75% per year. i.e 90% output of rated power after first 10 years and 80% after 25 years, in your computation sheet
2. Interest on working capital is reducing in your computation sheet, where as the O&M cost keeps increasing year after year
3. Only 14% returns on equity is considered in the computation sheet for the pre-fixed levelized tariff. But it is our humble request to consider equity repayment as we borrow or get the equity investment partner. They will definitely ask the interest more than 14% or ask share from the profits in addition, equal to the 30% amount invested by them.

IV. REQUEST HONOURABLE COMMISSION FOR CONSIDER BELOW WHILE FIXING THE LEVELIZED TARIFF FOR TELANGANA STATE FOR THE COMPONENT-A OF THE SCHEME

1. Though the proposed pre-fixed levelized tariff of Rs.3.13 per unit is sufficient for the cash rich farmers or the investors, it is impossible for the small and marginal farmers to invest 30% equity which is equal to Rs.1.08 crores per Megawatt (**Table 1**)
2. To make the PM KUSUM scheme a great success, Government should extend CFA of 30% similar to the components B & C of the scheme (**Table 3**)
3. To make the scheme a great success, Government should ask NABARD/ IREDA/ MNRE/ PFC/ BANKS to provide interest free term loans to the farmers (**Table 2**)
4. Consider phased pre-fixed levelized tariff of first 12 years and next 13 years of 25-year tenure to enable farmer to repay the term loan and equity loans (**Table 4**)

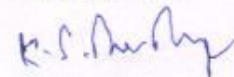
Hope we as farmers have put our request in front of honourable commission for consideration to make the PM KUSUM Scheme component A.

We can meet you in person if your kind permission as and when required with the calculations and explanations for better presentation.

Awaiting your kind reply for further action.

Thanking you sir

Yours sincerely



K Sita Rama Raju

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