



# ORF ENERGY

## NEWS MONITOR

### Energy News

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**ONGC is right to go ahead with exploration in Vietnam; geopolitics should not shackle industry and commerce!**

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#### [BAD]

**Something is definitely wrong in the system if all energy companies irrespective of whether they are extracting energy from the sea or the sun require a crutch from the Government!**

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#### [UGLY]

**Rather than NPCIL sensitising people about nuclear energy, NPCIL must sensitise itself about people!**

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### [OPTIONS FOR INCREASING VIABILITY OF INVESTMENTS IN SOLAR ENERGY]

“This is the basis for my strong suggestion for 100 per cent debt funding with full control stakes till the debt repayment for decentralized renewable energy projects. Many projects are not functional today even after these generous give-aways. The debt is not paid back and the projects are non functional and yet the promoters have become rich!!...”

[RENEWABLE  
ENERGY /  
CLIMATE  
CHANGE  
TRENDS]

### Options for Increasing Viability of Investments in Solar Energy

Praveen Kumar Kulkarni\*

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Today in India, corporate companies / entities or the crony capitalist system is enjoying free equity due to the prevailing policies / political expediency:

1. through Accelerated Depreciation (AD) earning 19 to 24% Return on Equity (ROE)
2. through Capital Subsidy earning 19 to 24% ROE
3. through Viability Gap Funding (VGF) + AD earning 19 to 24% ROE.
4. through equity padding – ‘jacking up the total project cost’ and earning 19 to 24% ROE

This is the basis for my strong suggestion for 100% debt funding with full control stakes till the debt repayment for decentralized renewable energy projects. Many projects are not functional today even after these generous give-aways. The debt is not paid back and the projects are non functional and yet the promoters have become rich!!

Thus, we are unable to create new generation honest entrepreneurs who can make capital work for them and their country.

The Govt of Gujarat sanctioned a loan of ₹ 2100 Crore at 0.105% interest rate for 20 years to set up TATA NANO project to create jobs in Gujarat. Why can a similar scheme not be devised for renewable projects?

<http://www.financialexpress.com/news/tata-nano-gujarat-loan-amount-row-/991861>

a). With Japan International Cooperation Agency (JICA) or Asian Development Bank (ADB) or equivalent Impact Investor or through other Development Loan Agencies or Debt syndicates loans at 3% interest rate for a 14 to 15 year period on rupee term, a decentralized renewable energy project will be viable on 100% debt (with interest subsidy of 5%):

Recently JICA has given 4 to 5% interest rate loan to Solar Energy Corporation of India (SECI) to develop the 1000 MW Solar PV park at Mehboob Nagar in Andhra Pradesh, which means that the Government (both State and Centre) can provide or access such low cost funds very easily.

I have assumed a total interest rate of 8% for 100% debt fund. I have also mentioned 5% interest subsidy so that the project interest rate is only 3%. Term loan is for 14 to 15 years. Total Interest subsidy paid over 14 to 15 years is only ₹ 23 Crore, lower if depreciating rupee is considered and hence, it is much better than quick VGF payment in the first 6 years assuming ₹ 2.3 Cr/MW for 10MW = ₹ 23 Crore as stipulated by SECI. This will be a great savings to the nation and it will avoid opportunities for crony capitalism. It can create large number of entrepreneurs in each taluk. In 4500 taluks, we can easily create 90 GW of Solar PV through 9000 entrepreneurs which will contribute to sustainability and offer low tariff to poor consumers.

You can see from the table that:

- a. The small entrepreneur will pay the debt installment of ₹ 4.5 Cr/year and still makes a profit of ₹ 90 laksh/year, which is enough for two entrepreneurs.
- b. The interest subsidy of 5% from the Government given under condition of assured generation will be of lower burden especially if the depreciation of the rupee is taken into account. There will be no loss on tax or loss of revenue through accelerated depreciation (which can be used to pay this Interest subsidy). It will eliminate the need for VGF (which is an additional saving for the Government) and also eliminate the need for capital subsidy and the corruption ridden process of reverse bidding.

- c. Tariff on power purchase agreement (PPA) is likely to be just ₹ 5.8/kwh, which is same as what comes out of projects under SECI with VGF operated mainly by large companies. This model is being proposed for two engineers / entrepreneurs at the taluk level to own the plant after 15 years while earning ₹ 80 to 90 lakhs/year and serve their taluk by creating local jobs. After 15 years, the project will be belong to these entrepreneurs and they will earn over ₹ 5 Crore from year 15 till year 25, which is an acceptable business proposition.

<b>Project Capacity</b>	<b>10</b>	<b>MW</b>	<b>Interest rate = 3%</b>
<b>Yearly Generation</b>	<b>1400000</b>	<b>kwh/MW</b>	
<b>Total Generation</b>	<b>14000000</b>	<b>kwh</b>	
<b>Project Cost</b>	<b>INR 6.2</b>	<b>Crore per MW</b>	
<b>Total Project Cost</b>	<b>INR 62</b>	<b>Crore</b>	
<b>Bank Loan</b>	<b>INR 62</b>	<b>Crore</b>	
<b>VGF 50%</b>	<b>INR 0</b>	<b>Crore</b>	
<b>Equity</b>	<b>INR 0</b>	<b>Crore</b>	
<b>Total</b>	<b>INR 62</b>	<b>Crore</b>	

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Financials:		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Year																	
Unit Generated:	kwh	1400000	13930000	13860350	13791048	13722093	13653483	13585215	13517289	13449703	13382454	13315542	13248964	13182719	13116806	13051222	
Rate Per unit	Rs/kwh	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	
Total Revenue	Rs. Lakhs	812.00	807.94	803.90	799.88	795.88	791.90	787.94	784.00	780.08	776.18	772.30	768.44	764.60	760.77	756.97	
Operation & Maintenance	Rs. Lakhs	10	100	105.72	111.77	118.16	124.92	132.06	139.62	147.60	156.05	164.97	174.41	184.39	194.93	206.08	217.87
Inverter Guarantee	Rs. Lakhs																
Insurance (0.1%)	Rs. Lakhs	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	
Gross Profit	Rs. Lakhs	712.00	702.22	692.13	681.72	670.96	659.84	648.32	636.40	624.04	611.21	597.89	584.05	569.66	554.69	539.10	
Interest on Loan	Rs. Lakhs	186	173.1	160.2	147.3	133.8	120.3	106.8	93.3	79.8	66.3	52.8	39.3	25.8	12.3		
Net Profit		526.00	529.12	531.93	534.42	537.16	539.54	541.52	543.10	544.24	544.91	545.09	544.75	543.86	542.39	539.10	
VGF		0	0	0	0	0											
Interest subsidy (5%)	Rs. Lakhs	310	288.5	267	245.5	223	200.5	178	155.5	133	110.5	88	65.5	43	20.5		
Loan Installment Payment		430	430	430	450	450	450	450	450	450	450	450	450	450	410		
<b>Balance (Net Cash Flow)</b>		<b>96.00</b>	<b>99.12</b>	<b>101.93</b>	<b>84.42</b>	<b>87.16</b>	<b>89.54</b>	<b>91.52</b>	<b>93.10</b>	<b>94.24</b>	<b>94.91</b>	<b>95.09</b>	<b>94.75</b>	<b>93.86</b>	<b>132.39</b>	<b>539.10</b>	

### Renewable Energy Generation:

a). Such local taluk level entrepreneurs with open and transparent business model and with low cost 100% debt finance will result in return of 5 to 10 lakh/year/MW after paying loan installment, interest and expenses for the entrepreneur and decentralized renewable energy for consumers. With such a model, it is possible to harness 100,000 MW solar PV. This is likely to be the best intermediate solution till we find better storage technology for renewable energy. As the need for viability gap funding, accelerated depreciation and capital subsidy will be eliminated, Government burden will be much lower. It will also facilitate public participation and create a large number of jobs through local entrepreneurs. Subsidiary industries and EPC companies will also flourish as a result.

Germany, USA and China can learn from India rather than India learning from them as it is usually the case. This is entirely in our hands if entrepreneurs, policy makers and the people come together to make a long term change.

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Views are those of the author

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