To
The Secretary
Telangana Electricity Regulatory Commission
Sy.No.145-P, Vidyut Niyantran Bhavan
Kalyan Nagar, GTS Colony, Hyderabad **February 25, 2025**

Respected sir,

Sub : Further submission of objections, suggestions and views in OP No.21 of 2025 and IA No.4 of 2025, and OP No.22 of 2025 and IA No.5 of 2025 filed by TGSPDCL and TGNPDCL, respectively, for their ARR, FPT and CSS for the FY 2025-26

Further to our submissions dated 20.2.2025, we are submitting the following additional points for the consideration of the Hon'ble Commission in the subject petitions:

1. **For three consecutive years from 2019-20 to 2021-22, TGDISCOMs could not file their ARR and tariff proposals in time. There were no RSTOs for those three years. Without RSTO, the DISCOMs collected tariffs for the three years as per the RSTO for 2018-19, without prior permission of the Commission. Later, the Commission permitted the DISCOMs to collect tariffs accordingly, with retrospective effect, till new RSTO order is issued. As a result, the DISCOMs had to face larger and accumulated revenue gaps. For the year 2022-23, considering petitions of the DISCOMs and submissions of objectors, the Commission issued RSTO, allowing tariff hike with an additional burden of Rs.6078.73 crore, which is the highest impact of tariff hike in any year in the history of Telangana, after factoring a subsidy of Rs.8221.17 crore the government agreed to provide. As a result of the failure of the then government to initiate the process for appointment of Chairman and Members to the Commission, TSERC acted as a one-man Commission for nearly ten months up to 9th January, 2019 and became defunct for nearly ten months up to 29th October, 2019.**

2. **The DISCOMs have not been allowed to file their petitions of true-up for variations in power purchase cost in time over the years. In fact, accumulated claims of true-up for variations in their retail supply business for a period of seven years from 2016-17 to 2022-23 (provisional) filed along with their petition for ARR and tariff revision for FY 2023-24 were considered by the Commission for a hefty sum of Rs.12,514.57 crore for both TGSPDCL and TGNPDCL - Rs.10281.73 crore under true-up and Rs.2232.84 crore under "reversal of UDAY savings" claimed in distribution true-up – in its retail supply tariff order for 2023-24. Along with subsidy committed for retail supply business for 2023-24, GoTS committed to support the DISCOMs, without burdening the consumers, by providing the above sum of Rs.12,514.57 crore over a period of five years. (RSTO for 2023-24: pp 115-116). The DISCOMs have to reveal how much amount GoTS has provided to them so far out of the committed amount under true-up.**

3. **For balance amount, if any, for 2022-23 and true-up claims thereafter for retail supply business for subsequent years till 2024-25, the DISCOMs have not been allowed by successive governments to file their petitions for fuel cost adjustment so far. Nor have the DISCOMs been allowed to collect not more than Re.0.30 per unit per month, though permitted by the Commission, in the CC bills so far. May be, political expediency of pre-election periods for the ruling parties of the day has over taken regulatory compliance of the DISCOMs. The DISCOMs have to explain reasons for their non-compliance of regulatory requirements in this regard. It may be noted that petitions on claims of TGTRANSCO and TGDISCOMs for the 4th control period are filed by them for their transmission and distribution business, because they come under true-down.**

4. **For the recurring failures of the government and its DISCOMs to get the required petitions filed or to file, as the case may be, especially of ARR and tariff revision and FCA, we request the Hon'ble Commission to dispense with the FCA arrangement and collection of a certain amount per unit per month, without prior approval of the Commission, and direct the DISCOMs to incorporate their revenue gap that would arise as a result of variations in expenditure and revenue permitted by the Commission for the FY concerned, in the ARR and tariff revision they propose for the next FY, and determine permissible ARR for the next year. Such an arrangement would put an end to a number of anomalies and imbalances associated with the arrangement of FCA in vogue and failures of the DISCOMs to file their required petitions in time. We can make detailed submissions in support of this proposal as and when petitions for true-up/true-down of FCA claims due are filed by the DISCOMs for their retail supply business and the Commission takes them up for its consideration through public consultation and public hearings.**

5. **In response to the directive of the Commission to adhere to the timelines as specified in Regulation 2 of 2023 in future filing of petitions, that the DISCOMs have responded casually - "shall be complied" by SPDCL and "yet to be complied" by NPDCL - indicates their inability to do so and that it depends on the approach of the government.**

6. **The DISCOMs have shown interest on pension bonds to the tune of Rs.1523.44 crore - Rs.1074 crore by SPDCL and Rs.449 crore by NPDCL. This is a legacy of unbundling of the erstwhile APSEB in the undivided Andhra Pradesh, as a part of reforms, subsequent tripartite agreement for division of assets, liabilities and personnel between generation, transmission and distribution entities, and orders being given by the ERCs every year allowing interest on pension bonds as pass through. After bifurcation of A.P., too, this trend has been continuing in both the Telugu States. It is a standard practice that pension funds have to be maintained from the contributions of the Management and employees and used appropriately to earn interest thereon. Since the erstwhile APSEB used those funds for other purposes, without accounting for the same, as a part and parcel of the first transfer scheme, after revaluation of assets of all the power utilities of GoAP in undivided Andhra Pradesh, the first APERC allowed interest on pension bonds to be collected**

from consumers and subsequent Commissions also have been following the same pattern. On my submission earlier, APERC wrote a letter to the government to consider taking over of pension liabilities by GoAP to settle the issue once for all, but there has been no response. As a part and parcel of bifurcation of A.P., power utilities of Telangana inherited those arrangements relating to pension funds and TGERC also has been following the approach of APERC to allow interest on pension bonds as pass through to be collected from consumers. It is nothing but penalising the consumers for the failures of the erstwhile APSEB and governments. That the government should take over liability of pension bonds is one of the points in the tripartite agreement. With or without that point, imposing the burdens of interest on pension bonds on the consumers is irrational and unfair. I request the Hon'ble Commission not to allow the claimed interest on pensions bonds as pass through, but to direct the DISCOMs, as well as TGGENCO and TGTRANSCO, to claim the same from the government.

7. **The Hon'ble Commission directed the DISCOMs to take steps for installation of prepaid smart meters with latest technology for** "all interested consumers." **At the same time, the Commission also directed the DISCOMs to submit** "a time bound action plan for replacement of existing meters with prepaid smart meters with two way communication in the interest of revenue realisation of the DISCOMs." **If prepaid meters are to be installed for "all interested consumers," it is left to the discretion of the consumers. Then, where is the need for a time-bound action plan for replacement of existing meters with prepaid smart meters?**

8. **In the subject petitions, responding to the directives of the Commission, SPDCL has contended that "**As per the Gazette notification by the Central Electricity Authority (CEA), Ministry of Power Dt.17-08-2021 it is mandatory that all the existing meters (other than Agriculture Consumers) are to be replaced with Prepaid Smart Meters with the following timelines. All electrical divisions having more than¬ 50% consumers in urban areas with AT&C losses more than 15% in FY2019- 20, other electrical divisions with AT&C losses more than 25% in FY2019-20, all Govt. Offices at Block level and above, and all industrial and commercial consumers shall be metered with Smart meters working in pre payment mode by December'2023. All other areas shall be metered with Smart meters working in pre-payment mode by March'2025." **That the DISCOMs have not complied with the notification of the CEA confirms that it is not mandatory.**

9. **In their responses to the directive of the Commission, the DISCOMs have responded, inter alia, that "**As per the instructions of the Hon'ble Chief Minister of Telangana, a letter Dt.12.12.2023 was addressed to the Special Chief Secretary (Energy), Govt. of Telangana requesting to address a letter to the Ministry of Power, GoI regarding concurrence of GoTG for participation of TGDISCOMs in RDSS and accord approval for participation with revised DPR, as the scheme has been started in other States two years ago. The implementation of Smart Prepayment Meters will be taken up after approval by Ministry of Power, GoI for participation of TGDISCOMs in RDSS with revised DPR. The implementation of Smart Prepayment Meters will be taken up after approval by Ministry of Power, GoI for participation of TGDISCOMs in RDSS with revised DPR"

(RSTO for 2024-25 : page 98). It is clear that the BRS government had already issued instructions to participate in the RDSS with revised DPR. Deputy Chief Minister Sri Bhatti Vikramarka is recently reported to have announced that the state would participate in the RDSS. The Commission has directed TGDISCOMs to ensure the compliance of the directives of the Commission **(ibid. Page 99).**

10. **The DISCOMs have submitted that, if pre-paid smart metering is to be taken up for the existing 81 lakh consumers, excluding agriculture consumers, an amount of Rs.9308.37 crore is estimated to be required for system metering under RDSS. If they do not participate in RDSS, they have to bear Rs.900 per meter, with an approximate financial commitment of Rs.729 crore, the licensees have explained. TGNPDCL has informed that, as per GO Ms No.1 dated 3.1.2016, it purchased 18812 prepaid meters for installation to government services and that 15035 meters are installed till now. The project was closed in July, 2023, it has informed. Since the government is the consumer here, its direction is a consent for installation of prepaid meters to its offices. Has installation of the prepaid meters served the intended purpose of improving collection efficiency of the DISCOM by stopping supply of power for not pre-paying amounts and resupplying power after pre-payment? What are the dues, if any, under the prepaid meters already installed? Have the DISCOMs made any cost-benefit analysis?**

11. **In response to the directive of the Commission to collect 100% outstanding dues from all its consumers, including government departments, regularly, NPDCL has maintained** "except Government and SC & ST consumers, all other consumers are paying 100%." **If that is so, for all other consumers, except government and SC & ST consumers, there would be no need to install pre-paid meters. Could the DISCOM give accumulated dues from consumers, category-wise? SPDCL has replied that** "all the possible efforts are being made for collection of 100% outstanding dues from all the consumers," **without giving details of the outstanding dues, category-wise.**

12. **Since we have made detailed submissions on the negative consequences of pre-paid metering system in our submissions dated 13.1.2023 on the ARR petitions of the DISCOMs for 2023-24, we are not repeating the same here. However, we request the Hon'ble Commission to examine the following points, among others:**

    a) **Electricity Act, 2003, does not provide for mandatory installation of pre-paid meters or replacement of existing meters with pre-paid meters, without consent of the consumers. As such, notifications of the CEA, government of India, directions of the state government and regulations of the Commission, if any, cannot have legal tenability, if they are contrary to the law. That is the reason why the Hon'ble Commission directed the DISCOMs to install prepaid meters to "**all interested consumers**."**

    b) **If the DISCOMs purchase prepaid meters, as per notifications of the CEA, MoP, GoI, direction of the state government and under RDSS, what will they do with**

the meters purchased, if the consumers do not give consent for installing the same? Who should bear that wasteful expenditure? Therefore, we request the Hon'ble Commission to direct the DISCOMs to ascertain voluntary willingness of the consumers for getting pre-paid meters installed and purchase the same to the extent required.

c) **We request the Hon'ble Commission to direct the DISCOMs in no uncertain terms that they can install pre-paid meters or replace existing meters with pre-paid meters to the service connections of only those consumers who give their consent for the same.**

d) **For implementation of ToD charges also, smart meters may be necessary. How are the DISCOMs implementing ToD charges? If they are implementing ToD charges by installing smart meters, with a facility for metering power consumption during peak, off peak and other hours, it should be considered that ToD charges are also intended for installation of smart meters.**

e) **We request the Hon'ble Commission to make it clear abundantly that installation of pre-paid smart meters is not mandatory and that it is left to the discretion and willingness of the consumers. We also request the Hon'ble Commission to direct the DISCOMs to give wide publicity accordingly to create awareness among the consumers at large well in advance before implementing the scheme.**

13. **In response to the directives of the Commission to make all possible efforts to improve their internal efficiency and reduce the gap between ACS and ARR, conduct awareness programs among the consumers regarding safety standards, take steps for use of safety appliances by O&M staff to avoid accidents, bring awareness among the consumers about energy conservation measures to reduce the consumption during peak hours to optimize the power purchase, comply with standard of performance regulation, and assess the need of unblocking of RKVAH lead for KVAH billing and submit the detailed report, while NPDCL has explained the efforts it is making, without giving details of the results achieved relating to some of the issues, SPDCL's response is simply casual -** "shall be complied."

14. **The Hon'ble Commission has again directed the DISCOMs** to explore the possibility of arriving at a consensus among its agricultural consumers regarding the hours of supply for its peak load management. **Responding to the directive, TGNPDCL has submitted that it** is conducting the awareness programs with the agriculture consumers regarding utilization of supply to the agriculture in day time instead of peak load hours. The consumers were motivated to remove the Automatic Starters to use the supply whenever required and to avoid the peak demand on the system. **The DISCOM has not given any details as to how many agriculture consumers have agreed to consume power in day time, instead of peak load hours, and if agreed, how it is being implemented and to what extent their consumption during peak hours has come down. SPDCL has simply stated that it "**shall be complied." **The need for supply of power to agriculture**

throughout the day and throughout the year has been rightly questioned on various grounds when the scheme was announced by GoTS. While the directives given by the Hon'ble Commission indicates rethinking on the policy and need for changes, the responses of the DISCOMs indicate that, as long as the policy continues to be in force, it may not be possible to persuade the farmers to not consume power during peak hours. Therefore, it is for the GoTS to take appropriate decisions to ensure supply of power during day time, as desired by the farmers, and alternative ways of ensuring supply of power to agriculture to meet demand to the extent required.

15. **In its order dated 22.6.2022 issued in O.P.No.46 of 2022, according consent to the TS DISCOMs to enter into "power usage agreements" for purchasing 1692 MW of solar power of private projects to be set up in Rajasthan, Gujarat and Tamil Nadu through the NTPC Limited under Central Public Sector Undertaking (CPSU) Scheme Phase II, the Hon'ble Commission, as well as the DISCOMs, put forth several arguments in support of the same. So is the case with order dated 26.10.2022 issued by the Commission in O.P.No.69 of 2022, according in-principle approval for procurement of a total of 2545 MW of solar power by TS DISCOMs through NTPC, NHPC and SECI.. In the reasons given for delay in filing the subject petitions, the DISCOMs have stated that they are awaiting** the revised scheduled CODs of NCEs **as one of the reasons. We request the Hon'ble Commission to examine the following points, among others:**

    a) **What are the scheduled CODs of the above-mentioned plants of solar power, and of other solar power plants, if any, as per the terms of their PPAs approved by the Commission?**

    b) **Have the DISCOMs got consent of the Hon'ble Commission to extend time for achieving CODs by the said plants? If so, for what reasons and the time of extension. If not, why not, in the light of the direction given by the first TSERC to the DISCOMs not to extend time for rescheduling of CODs of the RE plants, without its consent?**

    c) **While extending time schedules for achieving CODs, have the DISCOMs bargained with the entities with whom they had PPAs to reduce the tariffs determined in the PPAs in line with the ones being discovered through competitive biddings in the country?**

    d) **By virtue of the admitted delay in setting up the above-mentioned solar power plants, in view of revised schedules for CODs, are they getting waiver of inter-state transmission charges and transmission losses, as per the applicable notification of the MoP, GoI, if those plants are being set up outside the state?**

    e) **During the period when TSERC acted as a one-man Commission, due to consents sought by the DISCOMs and given by the Commission for extending time for scheduled CODs of private solar power plants, ostensibly, under terms of force majeure, in a questionable manner and without reducing the tariffs,**

even without calling for objections and suggestions from the interested public and without holding public hearings, the DISCOMs failed to protect their interests and those of their consumers.

f) Once consents are sought by the DISCOMs and given by the Commission to PPAs, adverse impact of binding obligations to purchase must-run, but unwarranted, power cannot be undone. It will take a few years to taper such adverse impact.

g) If, without getting consent of the Hon'ble Commission, the DISCOMs permit extension of time for revised CODs of the said solar power plants, we request the Hon'ble Commission to direct the DISCOMs to submit their proposals for seeking consent for such extensions, call for objections and suggestions from the interested public, hold public hearings and issue its orders to protect larger consumer interest.

16. **Earlier, the Hon'ble Commission gave consent to the DISCOMs to implement PM KUSUM for farmers. The DISCOMs highlighted the virtues of distributed solar generation earlier during public hearings of the Commission. In O.P.No.1 of 2023 (of TS GENCO), NPDCL had shown a saving of Re.0.76 per unit due to installation of solar power plant near load centres, instead of purchasing it from plants outside the state. What is the position of implementation of the scheme in the state so far?**

17. **In the subject petitions, the DISCOMs have stated that they** were in the process of floating of tenders with RFP for supply and erection of Solar Power Plants up to 4000 MW under 'Kusum Component – C. **Have the DISCOMs made any comparative analysis of the benefits and problems between components of A, B and C of KUSUM? How is component C is more beneficial than components A and B? What is the scope for real and wider competition in the bidding process being adopted by the DISCOMs to ensure the lowest possible tariffs?**

18. **Public-spirited administrators and experts like Dr E A S Sarma garu, former secretary, ministry of power, government of India, hav been stressing the need for shifting away from large centralised solar generation projects, in favour of decentralised solar facilities. In his letters addressed to the prime minister, chief ministers of the two Telugu states and senior bureaucrats concerned, he has articulated the issues. In his letter dated 25.9.2021 addressed to the PM, Sarma garu emphasised the following points, among others:**

a) While there may be some marginal economies of scale in centralised generation, around 15-20% of the electricity generated from such facilities will be lost in transmission and distribution, leading to the benefit of the scale advantage being neutralised.

b) Centralised solar electricity generation will require land in one place at the rate of 3 to 5 acres per MW, depending on the technology to be adopted. This will impose a severe strain on the scarce land resources of the country. Even in the case of coal-based

electricity generation which requires around one acre of land per MW, there has been public opposition to lands being acquired for setting up power projects.

c) Compared to centralised solar electricity generation, since solar rooftop facilities and solar irrigation pump sets are smaller in size and are dispersed regionally, the risks involved are less and are more easily manageable.

d) In the case of large centralised solar generation plants which have an economic life of 15-20 years, once set up, the technology choices get preempted, whereas this is a field in which technologies are constantly evolving and the efficiency of conversion of solar radiation into electricity is constantly improving. In the long run, therefore, opting in favour of much smaller distributed facilities would be more prudent as they permit induction of more efficient technologies on a continuing basis.

e) At a time when the unit cost of electricity from solar plants is falling sharply due to competition and introduction of state-of-the-art technologies, power purchase agreements (PPAs), valid for 15-20 years, entered into by the State utilities are proving to be disadvantageous in the long run, resulting in some States even trying to reopen the PPAs, a trend that could act as a disincentive to genuine investors. In the case of decentralised generation units, such a risk may be minimal, as the States can pick and choose the panel suppliers in smaller lots from time to time, as the programme expands and the technology improves.

f) Decentralised solar generation provides an opportunity to the consumers to become equal partners in electricity generation and enable them to earn incomes from the surplus energy they generate. In the case of centralised generation plants, residential and agricultural consumers of electricity are forced to become dependent on the utilities that convey the electricity, whereas they are less dependent on the utilities, if they become electricity generators themselves. In a way, this will effectively *democratise* electricity generation.

g) In the case of centralised solar generation, the delivered price of electricity at the consumer-end is the cost of generation plus the cost of transmission and distribution, adjusted upwards for the T&D losses. On the other hand, in the case of distributed electricity generation, every unit of electricity supplied by the consumer to the utility would save for the latter, a corresponding unit of electricity purchased by the utility at the highest cost at the margin and delivered with T&D losses. Adopting an "*avoided cost rate structure"*, it will be financially viable for the utility to pay a correspondingly higher price to the consumer at that rate. This will incentivise the consumers to set up rooftop panels and individual irrigation facilities, as it will create a new avenue of income generation for them. This will be a *win-win* situation for the utilities and the consumers in an equitable manner.

h) Many corporate investors who have bid for setting up large centralised solar power plants are known to owe large dues to the financial institutions against the loans taken by them for other projects. The public financial institutions are already saddled with NPAs and

one cannot rule out the possibility of some of the large solar projects compounding this problem further, as there is stiff competition among them to get the franchise for setting up such plants, resulting in the quoted tariffs falling below the notified benchmark tariffs. Going by their past track record, they may default on loan repayments in the future. **(Copy of the letter is enclosed).**

19. **I request the Hon'ble Commission to take a holistic view, as and when it examines the proposals of the DISCOMs for purchase of RE, especially solar and wind power, to ensure that it should not lead to imbalance between demand fluctuation and power mix and availability of avoidable quantum of surplus power to the extent technically practicable, to ensure lowest possible tariffs through real and wider competitive bidding. A cautious and gradual approach is imperative to ensure such a balance in tune with requirements of the state for power and larger interest of the consumers at large, irrespective of the policies and directions of the central and state governments which are not mandatory in terms of law.**

20. **I request the Hon'ble Commission to hold public hearings in both physical and virtual modes. I request the Hon'ble Commission to provide me an opportunity to make further submissions in person, after receiving and studying responses of the DISCOMs, during the public hearings. If the Hon'ble Commission holds public hearings in virtual mode also, I request to provide me a link to participate in the public hearing on the petition of NPDCL through virtual mode. We request the Hon'ble Commission to consider our earlier and above submissions, among others, and give reasoned order.**

Thanking you,

Yours sincerely,

M. Venugopala Rao
Senior Journalist & Convener, Centre for Power Studies
H.No.1-100/MP/101, Monarch Prestige, Journalists' Colony,
Serilingampally Mandal, Hyderabad - 500 032

Encl : Copy of letter dated 25.9.2021 of E A S Sarma garu

Copies to : 1. Chief Engineer (RAC), TGSPDCL
2. Chief Engineer (IPC & RAC), TGNPDCL

Shift away from large centralised solar generation projects, in favour of decentralised solar facilities (e.g. rooftop generation and solar irrigation pump sets)

25.9.2021

EAS Sarma **3:54 PM (1 hour ago)**

to me

E A S Sarma

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Visakhapatnam 530002

Mobile: +919866021646

To

Shri Rajiv Gauba

Cabinet Secretary

Govt of India

Dear Shri Gauba,

Kindly place the enclosed letter on solar electricity generation for the Prime Minister's perusal for appropriate action.

Regards,

Yours sincerely,

E A S Sarma

Former Secretary to Govt of India

Visakhapatnam

25-9-2021

Letter to the Prime Minister

Subject: Promotion of decentralised solar electricity generation, in preference to large centralised solar generation projects

To

Shri Narendra D Modi

Prime Minister

Dear Shri Modi,

Over the last few years, as a part of the global effort to mitigate the effects of climate change, India has rightly taken conscious strides towards a shift from fossil fuels to renewable sources of electricity generation. The National Solar Mission (NSM), which has taken the central place in India's National Action Plan on Climate Change, targets installing 100GW of grid-connected solar power plants by the end of the year 2022, in line with India's Intended Nationally Determined Contributions (INDCs), which target to achieve 40% cumulative electric power installed capacity from non-fossil fuel based energy resources and to reduce the emission intensity of its GDP by 33 to 35% from 2005 level by 2030.

While India has aggressively moved forward in this direction, as at the end of August, 2021, the cumulative solar installed capacity could reach a level of only 45.61GW, out of which contribution from large centralised solar power generation plants is as high as 85%. Despite several schemes put in place by the Ministry of New & Renewable Energy (MNRE) to promote roof-top solar electricity generation to reach a level of 40,000 MW by the end of 2022, the cumulative roof-top generation achieved so far has been as low as 5486 MW.

In other words, we have fallen severely short of the goal set for solar generation, especially decentralised generation. Both the Centre and the States are moving away from decentralised solar facilities towards heavily centralised, large solar power projects. In my view, this trend needs to be contained and reversed at the earliest. It will be prudent for us to formulate a strategy that will promote decentralised solar electricity generation on a large scale.

In the long-run, there are distinct advantages for India in opting in favour of decentralised electricity generation facilities in preference to large centralised generation plants, for the following reasons.

1. **While there may be some marginal economies of scale in centralised generation, around 15-20% of the electricity generated from such facilities will be lost in transmission and distribution, leading to the benefit of the scale advantage being neutralised.**
2. **Centralised solar electricity generation will require land in one place at the rate of 3 to 5 acres per MW, depending on the technology to be adopted. This will impose a severe strain on the scarce land resources of the country. Even in the case of coal-based electricity generation which requires around one acre of land per MW, there has been public opposition to lands being acquired for setting up power projects.**
3. **Compared to centralised solar electricity generation, since solar rooftop facilities and solar irrigation pump sets are smaller in size and are dispersed regionally, the risks involved are less and are more easily manageable.**
4. **In the case of large centralised solar generation plants which have an economic life of 15-20 years, once set up, the technology choices get preempted, whereas this is a field in which technologies are constantly evolving and the efficiency of conversion of solar radiation into electricity is constantly improving. In the long run, therefore, opting in favour of much smaller distributed facilities would be more prudent as they permit induction of more efficient technologies on a continuing basis.**
5. **At a time when the unit cost of electricity from solar plants is falling sharply due to competition and introduction of state-of-the-art technologies, power purchase agreements (PPAs), valid for 15-20 years, entered into by the State utilities are proving to be disadvantageous in the long run, resulting in some States even trying to reopen the PPAs, a trend that could act as a disincentive to genuine investors. In the case of decentralised generation units, such a risk may be minimal, as the States can pick and choose the panel suppliers in smaller lots from time to time, as the programme expands and the technology improves.**
6. **Decentralised solar generation provides an opportunity to the consumers to become equal partners in electricity generation and enable them to earn incomes from the surplus energy they generate. In the case of centralised generation plants, residential and agricultural consumers of electricity are forced to become dependent on the utilities that convey the electricity, whereas they are less dependent on the utilities, if they become electricity generators themselves. In a way, this will effectively *democratise* electricity generation.**
7. **In the case of centralised solar generation, the delivered price of electricity at the consumer-end is the cost of generation plus the cost of transmission and distribution, adjusted upwards for the T&D losses. On the other hand, in the case of distributed electricity generation, every unit of electricity supplied by the consumer to the utility would save for the latter, a corresponding unit of electricity purchased by the utility at the highest cost at the margin and delivered with T&D losses. Adopting an "*avoided cost rate structure*", it will be financially viable for the utility to pay a correspondingly higher price to the consumer at that rate. This will incentivise the consumers to set up rooftop panels and individual irrigation facilities, as it will create a new avenue of income generation for them.**

This will be a *win-win* situation for the utilities and the consumers in an equitable manner.

8. **Many corporate investors who have bid for setting up large centralised solar power plants are known to owe large dues to the financial institutions against the loans taken by them for other projects. The public financial institutions are already saddled with NPAs and one cannot rule out the possibility of some of the large solar projects compounding this problem further, as there is stiff competition among them to get the franchise for setting up such plants, resulting in the quoted tariffs falling below the notified benchmark tariffs. Going by their past track record, they may default on loan repayments in the future.**

Against the above background, I suggest that the Ministry of New & Renewable Energy (MNRE) review the strategy on solar electricity generation, reformulate the approach to solar rooftop facilities/ solar irrigation pump sets and shift solar energy development away from large centralised solar plants. The schemes put in place by MNRE to promote indigenous solar panel manufacture are welcome and they need to be strengthened and enlarged so that sufficient panel supplies can be arranged from indigenous sources to meet a much higher goal than now to be achieved in decentralised generation.

Recycling of solar panel waste material will soon pose problems. There is a need to promote R&D to develop environment-friendly recycling approaches.

The primary objective of the Solar Energy Corporation of India (SECI) seems to be "*to become the leader in development of large scale solar installations, solar plants and solar parks and to promote and commercialize the use of solar energy to reach the remotest corners of India*". Instead, SECI's primary role should have been to promote decentralised solar facilities. If this is not possible, I suggest that a separate promotion-cum-financing institution similar to the Rural Electricity Corporation (REC) [as it was originally conceived and operated] should be set up exclusively for promoting decentralised solar generation facilities. At the grassroot (village) level, Amul-type societies run by the decentralised generator-cum-consumers could help promote such facilities on a large scale.

I may add that many individual farmers of Andhra Pradesh are desirous of setting up such societies, provided they get loans on easy and competitive terms, secure a reliable reverse metering arrangement and receive a remunerative price for the surplus electricity they sell to the local utilities. I am sure that the consumers in the other States would also be interested in setting up similar solar societies. MNRE can make a beginning by setting up pilot solar societies to move forward without delay.

In countries like the USA, I have come across rooftop solar units set up with realtime internet-based monitoring facilities that enable the consumers to keep track of the solar electricity generated, used for self consumption and sold to the utility. India needs to adopt state-of-the-art technologies that permit

individual consumers and societies to monitor generation, self use and sale to the utility in a transparent manner.

In my view, India can and should assume a global leadership role in promoting *distributed solar electricity generation facilities* on a large scale, in preference to setting up large solar plants.

I hope that MNRE will consider these suggestions urgently and bring about a paradigm change in the policy on solar electricity generation.

Regards,

Yours sincerely,

E A S Sarma

Former Secretary to Govt of India

Visakhapatnam

25-9-2021