SOUTHERN POWER DISTRIBUTION COMPANY OF TELANGANA LIMITED

From
Chief Engineer (IPC),
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6-1-50, Mint Compound,
Hyderabad – 500 063.

To
The Commission Secretary,
TGERC,
Vidyut Niyantran Bhavan,
GTS Colony
Hyderabad – 500 045.

Lr. No.CE(IPC)/DE(IPC)/ADE-K/F.No.KUSUM A/D.No. 126 /25-26, Dt: 19 -04-2025.

Sir,

Sub:- TGSPDCL- IPC – Replies to the objections/suggestions raised by the stakeholders on petition filed by TGDISCOMS seeking consent for procurement of 4000 MW (inclusive of 1000 MW capacity for Women SHGs under INDIRA MAHILA SHAKTI SCHEME) and Model Power Purchase Agreement (PPA) for decentralized Ground Mounted Grid-Connected solar power for a period of 25 years from the Commercial Operation Date (COD) by TGDISCOMs under Component-A of PM KUSUM Scheme vide OP.NO: 32/2025 - Submission - Reg.

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With reference to the subject cited above, the replies to the objections raised by the stakeholders on aforesaid subject are herewith enclosed with a request to kindly place the same before the Hon'ble Commission for approval.

Enclosures: As above

Yours faithfully,

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Replies for objections raised for the procurement of 4000 MW (including 1000 MW for Women SHGs under INDIRA MAHILA SHAKTI Scheme) and Draft Model PPA under Component-A of PM KUSUM Scheme (OP No. 32/2025)

1. **Replies to Comments from SolarBull Energy LLP (SBEL/TS/02) on the petition by TG DISCOMs for consent for procuring 4000 MW distributed solar (including 1000 MW for SHGs)**

Query / Suggestion / Comments	Reply from TGDISCOM and TGREDCO
I. Comments on Key Assumptions in Draft Tariff Order	
Interest on Long-Term Loan at 10% - Most banks are currently quoting interest rates exceeding 11%, especially when CGTMSE charges are factored in. Suggest revisiting the assumption.	Under purview of the Hon'ble Commission
Working Capital for One Month - Since the PPA proposes a payment cycle of 45 days post-invoice, the working capital requirement should be increased accordingly	Working capital is as per the Commission's approved order dated 23.09.2021
Income Tax Reimbursement - While the tariff assumes reimbursement of income tax upon submission of challans, the draft PPA does not provide any such clause. We request explicit inclusion in the final PPA	The PPA was drafted in line with the MNRE Model PPA, so that particular clause was not specifically mentioned. Inclusion in the PPA will be done as per the Commission's instructions.
CUF of 19% - This equates to ~16.64 lakh units/MW/year, which is not achievable in Telangana without DC overloading. Achieving this CUF would necessitate 10–20% additional module capacity, raising capital costs. The assumption may be valid in higher-radiation states like	CUF of 19% is considered as per the TGERC order dated 23.09.2021 for which the tariff was fixed by TGERC as Rs. 3.13 /kwh

Rajasthan or Gujarat but not in Telangana. Hence, we request the Commission to consider a higher tariff than ₹3.13/unit to ensure project viability.	
II. Comments on Draft Model PPA	
Terminology Consistency The terms Solar Power Developer (SPD) and Solar Power Generator (SPG) are used interchangeably. We recommend consistently using "SPG" throughout the document to avoid ambiguity.	Both the terms Solar Power Developer (SPD) and Solar Power Generator (SPG) mean the same. "Solar Power Developer" in the PPA, may also be considered as "Solar Power Generator"
Definition of CUF (Page 7) The current definition calculates CUF based on DC (kWp) capacity. We recommend changing this to AC (kW) capacity in alignment with: • Practical field conditions (DC-based 19% CUF is unrealistic in Telangana), • CERC guidelines (CUF is calculated on AC basis) • The PPA definition of Project Capacity (max AC output at delivery point). Suggested revision: *CUF = (Cumulative Energy Output in kWh) / (Installed AC Capacity in kW × 24 × 365)*	The standard formula for CUF is outlined in the PPA. However, the solar power generator may install additional panels to achieve the desired CUF.
Clause 4.3.2 – Minimum CUF Obligation • The mandate of 19% CUF with ±10% variation is stringent. • We propose reducing the minimum CUF to 17%, considering: o Seasonal fluctuations outside the SPG's control, o Module degradation (~2% in Year 1; ~0.55%/year thereafter),	CUF of 19% is considered as per the TGERC order dated 23.09.2021 for which the tariff was fixed by TGERC as Rs. 3.13 /kwh

○ Developers would typically overdesign early years to manage degradation and variability	
Clause 4.3.4 – Shortfall Penalty and Excess Generation Treatment • A 25% tariff penalty for CUF shortfall is severe. • Treating excess generation as "inadvertent" and accepting it free of cost disincentivizes efficiency. <u>Suggestions:</u> • Allow excess generation up to +20% instead of +10%, or • Reduce the minimum CUF requirement to 17%, and/or • Waive or soften shortfall penalties during initial years.	25% penalty was taken as per MNRE Model PPA
Clause 5.1 – Interconnection Responsibility The clause appears to assign full interconnection responsibility to the SPG. We request clarification on whether this applies uniformly to both the 3000 MW general tender and the 1000 MW SHG tender, especially since the latter may involve multiple small farmer-SPGs.	For all capacities ranging from 0.5 MW to 2 MW, the responsibility for interconnection shall lie with the Solar Power Generator (SPG).
Clause 16.1 – Assignment of PPA The current PPA prohibits assignment/novation. We request that the Commission allow PPA assignment to third parties, subject to facilitation fees. This is crucial for enabling financing and flexible partnership models involving land-owning farmers.	As per MNRE Model PPA
III. Comments on Clause 3.22 of OP No. 32 of 2025: Role of State Implementing Agency (SIA) Clause 3.22 rightly entrusts the SIA (TGREDCO) with handholding responsibilities, including facilitating bank	• TGDISCOMs will assess the technical feasibility and will communicate shortly regarding the connection of multiple plants via a single transmission line.

finance and coordination with local authorities. While we appreciate the orientation programs conducted at DISCOM Circle Offices, we wish to bring the following gaps to the Commission's attention: <u>Unaddressed Farmer Queries Include</u>: • Can multiple plants be connected via a single transmission line? • Are bank loans available, and under what terms? • Can the 2 MW capacity be split into smaller sub-projects (e.g., 0.5–1 MW)? • Required permissions from government departments • Post-installation eligibility for Rythu Bharosa and other schemes. In the absence of consolidated guidance, many farmer-developers are repeatedly visiting TGREDCO offices for clarification, placing avoidable strain on SIA officials.	• TGREDCO has held a meeting with bankers. They will convene another meeting after entering into the Power Purchase Agreement (PPA). • Splitting into smaller sub-projects will be shortly decided by TGDISCOMs • TGREDCO will assist generators in connecting with the appropriate contacts within government departments. • Post-installation eligibility for Rythu Bharosa and other schemes is not applicable
IV. Suggestions for Better Implementation: Inspired by Best Practices in Rajasthan We respectfully request the Hon'ble Commission to kindly advise TGREDCO to compile and publish: • A comprehensive FAQs document or circular covering the above farmer queries, • And make it publicly accessible via the TGREDCO and DISCOM websites. We also request that the Hon'ble Commission advise TGDISCOMs to publish: • All relevant internal circulars/memos on metering, transmission lines, substation connectivity, inspection, and synchronization processes.	• FAQ document will be prepared shortly and will be uploaded on the TGREDCO website • SOPs specifying the standard timelines are published on the DISCOMs website

• Standardized timelines for service-level approvals. <u>JVVNL has published a well-structured SOP with:</u> • **Approval timelines:** 11 kV Line – 7 days (by AEN); 33 kV Line – 10 days (by XEN) • **Line Shifting**: LT – 15 days, HT – 30 days • **PDI & ABT Meter Testing:** 7 days for inspection, 5 days for testing • **Synchronization & Commissioning:** Site visit report within 5 working days • **Redressal Mechanism:** Consumer Grievance Redressal Forum and Electricity Ombudsman <u>Benefits of this Model:</u> • Time-bound and transparent processes • Reduced ambiguity and delays • Empowered farmer-developers • Efficient use of institutional resources	

2. **Replies to Comments from SolarBull Energy LLP (SBEL/TS/03) on the petition by TG DISCOMs for consent for procuring 4000 MW distributed solar (including 1000 MW for SHGs)**

Query / Suggestion / Comments	Reply from TGDISCOM and TGREDCO
I. Definitions: Installed Capacity vs Project Capacity vs Contracted Capacity Issue: • "Installed Capacity" is defined ambiguously as the nameplate capacity or AC rating at the delivery point. • "Project Capacity" is defined as the maximum AC capacity at the injection point. • "Contracted Capacity" is referenced in energy-related clauses but not clearly defined or aligned with the above. **Suggestion:** • Clearly define and standardize these terms as follows: **Model Clause Suggestion:** "Installed Capacity" shall refer to the nameplate capacity of the solar PV modules (DC side). "Project Capacity" shall mean the rated output of the inverter capacity at the Solar Plant (AC side). "Contracted Capacity" shall mean the maximum AC capacity (in kW) agreed upon between the SPG and the Procurer under the PPA, which shall be the basis for energy accounting, CUF calculation, penalties, and incentives.	Installed Capacity, Project Capacity and Contracted Capacity have been defined in the PPA under **Article 1**
II. Clause 5.1 – Interconnection Responsibility • **Issue:** The clause places the entire responsibility of interconnection approvals and facilities on the SPG, which may be unfeasible, especially for SHG/farmer developers.	TGREDCO is the State Nodal Agency and will assist SHGs/farmers being single point of contact.

• **Suggestion:** Clarify support role of TGREDCO/DISCOM, especially for SHG-based developers. • **Model Clause Suggestion:** "In the case of projects developed by SHGs or small farmer-SPGs, TGREDCO and DISCOM shall provide facilitation through a single-window mechanism including provision of standard BOQs, technical formats, and coordination support for interconnection approvals and joint line sharing where feasible."	
III. Clause 10.4 – Auxiliary Consumption from • **DISCOM Issue:** Limit of 0.1% of installed capacity is too restrictive. • **Suggestion:** Allow up to 1.0% or clarify basis of calculation. • **Model Clause Suggestion:** "SPG shall be entitled to draw auxiliary power from the grid up to 1.0% of the Installed Capacity annually. Any drawal beyond this shall be charged as per prevailing HT-1 tariff. Net drawal shall be assessed on an annual basis."	It is incorporated as per the existing Solar PPAs approved by TGERC
IV. Clause 12 – Force Majeure Definition • **Issue:** Coverage of real-world risks such as seasonal variation, rainfall deficit, and pandemics is not clearly articulated. • **Suggestion:** Expand examples to reflect realistic operational risks. • **Model Clause Suggestion:** "Force Majeure events shall include, but not be limited to: extreme climatic variations such as prolonged cloud cover, unseasonal rainfall affecting solar generation, regulatory delays, pandemic-related restrictions, and	It is incorporated as per the existing PPAs and standard force majeure definition

policy changes materially affecting the project implementation or operations.”	
V. Clause 11.6 – Payment Security Mechanism • **Issue:** Letter of Credit is provided, but no mention of escrow accounts or payment backstop for SHG developers. • **Suggestion:** Introduce optional credit enhancement for small developers. • **Model Clause Suggestion:** "For SHG or small farmer SPGs, the Procurer may, at its discretion, provide an escrow mechanism or guarantee fund support to enhance the payment security framework."	Letter of Credit (LOC) is the standard payment security mechanism as per the existing Solar Power Purchase Agreements (PPAs) approved by TGERC
VI. Clause 14.3 – Early Termination and Asset Treatment • **Issue:** Lack of clarity on capacity reallocation or refund norms in the event of Force Majeure-induced termination. • **Suggestion:** Include transitional handling of capacity and refund of Performance Bank Guarantee (PBG). • **Model Clause Suggestion:** "In case of project termination due to proven Force Majeure or unviable financing terms, the SIA shall have the right to reallocate the capacity. The SPG shall be eligible for partial or full refund of PBG based on work completed and documentation submitted."	If the Force Majeure Event or its effects continue to be present beyond a period as specified in Article 4.4 of the PPA, either party shall have the right to cause termination of the Agreement. In such an event, this Agreement shall terminate on the date of such Termination Notice without any further liability to either party from the date of such termination.
VII. Language and Structural Improvements • **Issue:** Multiple clauses have overly complex sentence structures. • **Suggestion:** Break key obligations into enumerated bullet points or sub-clauses for readability and enforceability.	The PPA was drafted in line with MNRE Model PPA

• **Example:** Replace: "The SPG shall immediately after each synchronization/tripping... inform DISCOM... for avoidance of doubt..." With: 1. The SPG shall inform DISCOM within 24 hours of any synchronization or tripping event. 2. All such events shall be logged and made available for audit.	
VIII. Missing Clauses – Redressal & Approval Timelines **1. Grievance Redressal Contact -** Include a clause mandating publication of nodal officer contact details for each DISCOM/TGREDCO for resolution of developer issues (payments, approvals, synchronization). **Model Clause:** "TGREDCO shall designate a nodal officer and publish contact details on its portal for redressal of SPG grievances relating to approvals, payments, and project execution." **2. Standard Approval Timeline Annexure** Suggest annexing a schedule similar to Rajasthan's SOP (JVVNL) for time-bound approvals. **Example Timeline Annexure (Annex-I):** • Interconnection Approval (11 kV): 7 working days • Interconnection Approval (33 kV): 10 working days • CT/PT & ABT Meter Inspection: 7 working days post-payment • Synchronization Approval: 5 working days from application	• Circle wise nodal officers are assigned by TGREDCO, and the details are available on the TGREDCO website. • SOPs for timelines are mentioned in TGDISCOMs websites.

3. **Replies to Comments from SolarBull Energy LLP (SBEL/TS/04) on the petition by TG DISCOMs for consent for procuring 4000 MW distributed solar (including 1000 MW for SHGs)**

Query / Suggestion / Comments	Reply from TGDISCOM and TGREDCO
I. Tariff Justification Based on RERC Benchmark (March 2025) During the hearing, a query was raised regarding whether the tariff determined in 2011 would be higher or lower if recalculated based on today's costs. We wish to humbly submit the following: • The Rajasthan Electricity Regulatory Commission (RERC) has recently issued a tariff order on 25.03.2025, fixing the tariff at Rs. 3.04/unit for PM-KUSUM projects. • Rajasthan, however, has significantly higher solar radiation (5.5 to 6.2 kWh/m2/day) compared to Telangana's 5.0 to 5.5 kWh/m2/day. • Based on a 10% irradiation adjustment, a fair tariff for Telangana would be: Rs. 3.04 + 10% = Rs. 3.34/unit, which is higher than the currently proposed Rs. 3.13/unit. • This supports our earlier request to revise the tariff upward for Telangana.	The proposed rate of Rs. 3.13/kWh was determined based on the prevailing market rates of panels and other materials for solar power, assuming a project cost of Rs. 3.6 Crores, during the year 2021. With advancements in technology, the cost of solar panels has decreased, and their efficiency has increased. However, TGDISCOMs will adhere to the price determined by the Honourable TGERC.
II. Farmer Payback Period & Scheme Attractiveness • Even with the Rs. 3.13 tariff, our calculations show that farmers face a payback period of 14-15 years on their solar investments. Given that PM-KUSUM Component-A does not offer upfront subsidies to farmers, this long payback	

period is not attractive enough to encourage wide participation.

III. Clarification: PM-KUSUM Component-A vs Component-C

To aid policy clarity, we present the following comparative analysis:

Aspect	Component-A	Component-C
Modules	**ALMM (Indian modules; cells can be imported)**	**DCR (modules & cells made in India)**
Generation	**Higher (3-5% more due to higher-efficiency ALMM modules)**	**Lower generation due to lowerefficiency DCR modules**
Subsidy	**No subsidy to farmers**	**Subsidy of Rs. 1.05 Cr/MW from MNRE**
Tariff Bidding	**Not required**	**Competitive bidding (at district level, pooled capacity)**
Scale	**Small (0.5 to 2 MW)**	**Large (50 to 200 MW per bid package)**
Beneficiaries	**Direct farmer developers**	**Large developers; not a farmer**

		oriented scheme
Project Cost	**Lower**	**Higher**
DCR Cost Impact	**Not applicable**	**Rs. 1.23 Cr/MW higher (incl. GST)**

Observation: PM-KUSUM-C is not aligned with the ethos of farmer-centric development. Component-A is more equitable, economical, and efficient in terms of land use, costs, and distributed benefits.

Moreover, as per MNRE "Amendment ALMM Order for implementation of ALMM for Solar Cells" Ref. No. 283/59/2024-GRID SOLAR Dt. 9th December, 2024, from June 1, 2026, all solar PV modules used in projects – including government-backed schemes, net-metering projects, and open access renewable energy initiatives – will be required to source their solar cells from ALMM List-II.

With the current higher prices of DCR modules, we expect the capital cost for all solar projects including PM KUSUM Component A are expected to go up and the tariff's would accordingly be higher than the current rates.

IV. Project Timeline Pressure & Cost Escalation Risk

- The December 2025 deadline for commissioning leaves farmers with only a short window for implementation. The upcoming four-month monsoon season (June-September) further restricts effective working time to 3 months.
- This compressed timeline could:

MNRE, Government of India, has stipulated the scheme duration upto 31.03.2026 applicable across the country. This is already an extended timeline. And MNRE is also preparing for the launch of KUSUM Scheme Phase-II. In order to ensure timely submission of all necessary data and progress reports within the stipulated period. The commissioning deadline has been set as 31.12.2025. This

○ Severely strain local and national supply chains for modules, inverters, structures, transformers, labour, civil works, etc. ○ Lead to cost escalation across components. • **Request**: In light of both the short implementation window and the MNRE's upcoming DCR mandate (from June 1, 2026), we urge the Hon'ble Commission to expedite tariff ratification to enable timely project execution.	internal milestones intended to facilitate smooth implementation and alignment with the overall scheme objectives and timelines.
V. Divergence of Draft TGDISCOM PPA from MNRE Guidelines – Requests for Alignment We respectfully submit that several clauses in the draft PPA proposed by TGDISCOMs appear to diverge from the original intent and structure laid out by MNRE under its PM-KUSUM Scheme guidelines dated 22nd July 2019. These deviations may inadvertently increase procedural complexity or financial burden for farmer-based solar generators. We submit the following observations for the Hon'ble Commission's kind consideration: **A. Clause 7.3.2 – Remote Monitoring System (RMS) Requirement** "Remote Monitoring System (RMS) shall have to be made by the SPG for submission of data regularly for the entire period of the PPA... to TGDISCOM / SLDC / TGREDCO / MNRE." • RMS on a 11 kV line serving small (0.5–2 MW) farmer projects is neither costeffective nor necessary. • Existing metering systems and central MNRE data portals already provide sufficient performance tracking.	• As per TGERC and CERC grid code it is mandatory to have Remote Monitoring System (RMS) • CUF of 19% is considered as per the TGERC order dated 23.09.2021 for which the tariff was fixed by TGERC as Rs. 3.13 /kwh

Request: Kindly consider deletion of this clause or make it optional for small-scale developers. **B. CUF Mandate and Associated Penalties in Draft PPA** MNRE Guidelines (Ref. F.No.32/645/2017-SPV Division dated 22nd July 2019), under Clause (f) of Section A, state: "The Renewable Power Generator (RPG) is required to achieve a minimum CUF of 15% on an annual basis during the PPA period." However, the draft PPA issued by TGDISCOMs mandates: • Clause 4.3.2: CUF of 19% with only +10% excess allowed for the first 10 years. • Clause 4.3.3: Pro-rata limits in Year 1; relaxation only for grid non-availability. • Clause 4.3.4: 25% penalty on PPA tariff for shortfall in CUF. These clauses contradict MNRE guidelines and impose overly stringent expectations that are not aligned with actual performance patterns of small farmer-owned plants. **Request**: • Revise CUF obligation to 15%, as prescribed by MNRE. • Remove penalties for under-generation or excess generation. • Encourage farmer participation by keeping provisions flexible, in line with national policy.	
C. Clause (d) of MNRE Guidelines – Substation Sharing for Multiple Developers	• TGDISCOMs will assess the technical feasibility and will communicate shortly regarding substation sharing for multiple developers

MNRE guidelines also allow: "In case more than one bidder is awarded projects to be connected to the same substation, they shall be permitted to coordinate with each other for setting up common transmission line... with the approval of DISCOM." Many farmers raised this query during TGREDCO's orientation sessions, but no circular or written clarification has been issued by TGDISCOMs to date. **Request**: TGREDCO and TGDISCOMs may kindly be advised to publish FAQs and implementation guidelines clarifying coordination mechanisms, line-sharing arrangements, and approvals on their portals. **D. Overall Request for Harmonization** To promote inclusive participation and ease of doing business, we urge the Hon'ble Commission to: • Align Telangana's PPA structure with MNRE's notified guidelines. • Minimize deviations that could discourage farmer-led decentralised solar development. • Ensure transparency and consistency in communication through circulars and digital platforms.	
VI. Request for Monthly Coordination Committee to Support Farmer-SPGs While we deeply appreciate the Telangana Government's initiative in launching this scheme and empowering farmers to become first-time renewable energy entrepreneurs, we would like to highlight a practical challenge:	The request will be reviewed by TGDISCOMs and TGREDCO

• Many of these farmer-SPGs may lack the prior exposure, knowledge, or institutional familiarity to approach senior officials such as the CMDs of DISCOMs or the VCMD of TGREDCO to resolve operational hurdles. • With only 0.5 MW to 2 MW capacity projects and tight implementation timelines, even small delays in clearances, approvals, or technical support can impact viability and confidence. **Request:** We respectfully urge the Hon'ble Commission to advise TGREDCO to constitute a Coordination Committee comprising: • Senior officials from TGREDCO and TGDISCOMs • Representatives from Telangana Solar Energy Association (TSEA) • Representatives from Federation of Telangana Chambers of Commerce & Industry (FTCCI) • Other relevant stakeholders as deemed fit We further request that this Coordination Committee convene at least once a month to: • Review field-level issues raised by SPGs/farmers • Facilitate timely redressal of implementation bottlenecks • Ensure alignment between policy intent and on-ground execution This Coordination Committee would serve as a vital support mechanism for farmer-SPGs and small developers. It would reinforce the state's vision of inclusive, decentralized, and participatory solar development under PM-KUSUM.	

4. **Replies to Comments from TELANGANA STATE SOLAR OPEN ACCESS DEVELOPERS' ASSOCIATION (TSOADA) on the petition by TG DISCOMs for consent for procuring 4000 MW distributed solar (including 1000 MW for SHGs)**

Query / Suggestion / Comments	Rationale by TG DISCOMs
3.15. clearances required from the state government and other local bodies: In the present context, the Solar Power Generator (SPG) comes from a farming background and is facing significant challenges in navigating the numerous procedural requirements involving multiple departmental offices. This process has become a considerable burden, diverting their attention from the timely and efficient establishment of the plant. Therefore, I respectfully request this Hon'ble Commission to kindly issue directions to REDCO/DISCOMs to establish a **Single Window Clearance System**, wherein the SPG may submit all necessary applications and documents at a single point. This would greatly streamline the approval process and enable the SPG to focus on the timely and effective development of the project.	TGREDCO is the State Nodal Agency and will assist SHGs/farmers being single point of contact.
3.17. Bank Guarantees: Most of the farmers, who are acting as Solar Power Generators (RPGs), are currently in a state of confusion and uncertainty, primarily due to delays and challenges in securing financing from banks. Although applications were invited in January 2025, REDCO/Government authorities	TGDISCOMs / TGREDCO will act as per the bid rules

have not yet convened a meeting involving the bankers and the RPGs to facilitate the financing process. In this regard, I humbly request this Hon'ble Commission to kindly direct REDCO to **refund the EMD (Earnest Money Deposit)** amount in cases where the SPG is unable to establish the plant solely due to financial constraints beyond their control. This would provide much-needed relief and fairness to farmers who are willing but unable to proceed due to lack of institutional support.	
3.18. Connectivity: I respectfully request this Hon'ble Commission to kindly direct the DISCOM to extend full support and necessary coordination in the **laying of transmission lines** required for the evacuation of power from the project site. Timely assistance in this regard is crucial for the successful commissioning of the plant and to avoid unnecessary delays in project execution.	TGTRANSCO / TGDISCOMs will assist in execution of transmission line to the extent of where there are no ROW / Legal problems
3.22. Roles and Responsibilities of stake holders: ➢ DISCOM's: I respectfully request this Hon'ble Commission to kindly direct the DISCOM to issue a letter to the concerned Assistant Engineers at the substation level, where the respective Solar Power Generators (SPGs) are connected. The purpose of this directive would be to ensure that substation-level staff are properly briefed and made fully aware of the **"Must Run"** status accorded to SPGs. Further, they	Necessary instructions will be given to field officers to ensure grid availability

should be instructed to closely monitor operations and ensure that the plant runs continuously without any unwarranted interruptions, in alignment with regulatory provisions and guidelines.	
4.3.Right to contracted capacity & Energy: 4.3.2. I further request this Hon'ble Commission to kindly **clarify and specify the designated authority or agency responsible for ascertaining the Capacity Utilization Factor (CUF)** of the Solar Power Generators (SPGs). A clear directive in this regard will help avoid ambiguity and ensure uniformity and transparency in the assessment process.	• TGDISCOMs will be supervise the CUF
4.3.3. **Penalty is Excessive:** Imposing a **25% penalty on the PPA tariff** is unreasonably high, especially considering the unpredictable challenges SPGs face in the initial years—like weather variability, equipment stabilization, and teething issues in grid connectivity. **Ambiguity in Grid Availability Proof:** While the clause mentions grid non-availability as a relaxation, there is **no clear mechanism for documenting or certifying such non-availability**. SPGs should not be penalized for reasons not attributable to them, and there must be a transparent and accountable system for certifying grid outages.	• 25% penalty was taken as per MNRE Model PPA • Information about outages will be available in the control rooms of the respective circles.

Double Burden on SPGs: The clause places a **disproportionate financial risk on small/medium-sized SPGs**, especially those from farming backgrounds or without strong institutional support. This can discourage participation and slow down renewable adoption. **Recommendation – Replace Penalty with Adjustment:** Instead of a penalty, a more balanced approach would be to **allow energy banking or rolling over the shortfall to the next operational year**, especially for new SPGs still optimizing their operations.	
4.3.4 **a) In Case of Shortfall of Energy:** The SPG, as a generating entity, is fully committed to operating the plant at its rated capacity and meeting the expected generation targets. However, there may be instances where the SPG is unable to achieve the required CUF or generation due to circumstances that are **entirely beyond its control**, including but not limited to: • **Grid Outages** • **Equipment Failures** caused by adverse weather conditions, surges from the grid, or faults in the transmission lines • **Fire Accidents**, which are a potential risk associated with electrical infrastructure	• 25% penalty was taken as per MNRE Model PPA

Given that these issues are not within the control or fault of the SPG, I **humbly request this Hon'ble Commission to revisit and recall the penalty clause in the PPA related to generation shortfall**, in order to eliminate ambiguity and ensure fairness to SPGs. A more flexible and just framework would help protect the interests of generators, especially those operating in challenging environments or from small-scale and farming backgrounds. **b) In Case of Any Excess Generation:** In solar power generation, it is **technically impractical to predict the exact energy output (in kWh) in advance**, as the generation is inherently subject to **variations in climatic conditions, grid availability, and unforeseen technical issues**. Therefore, I respectfully request this Hon'ble Commission to **define an appropriate upper limit based solely on the installed plant capacity**. For instance, in the case of a 1 MW plant, the **Maximum Demand (MD) value should not exceed the rated capacity of 1 MW**. This approach would provide a **clear and technically sound framework**, aligning with the natural operational behavior of solar power plants and avoiding any penalization or dispute due to marginal excess generation which may occur due to favorable conditions. It ensures fairness, clarity, and ease of implementation for both SPGs and DISCOMs.	

Article 5: Interconnection Facilities, Synchronisation, Commissioning and Commercial Operation
 	
I respectfully request this Hon'ble Commission to kindly **direct the DISCOMs to issue a clear and comprehensive step-by-step procedure** outlining:
 	
• The **actions required from the Solar Power Generator (SPG)**
• The **roles, responsibilities, and support to be provided by DISCOMs**
• The **timeline and sequence of steps** for achieving:
  ○ Grid interconnection
  ○ Synchronisation
  ○ Commissioning
  ○ Declaration of Commercial Operation Date (COD)
 	
Such a structured and transparent process will help eliminate confusion, reduce delays, and ensure smooth coordination between the SPG and DISCOM. It will be particularly beneficial for new and first-time developers, especially those from non-technical or farming backgrounds, by enabling them to navigate the process confidently and efficiently.
	• Standard Guidelines will be made available on both TGDISCOMs and TGREDCO websites

Article 6: Dispatching and Scheduling **Clause 6.1.3:** As per Regulation 1 of 2024, Solar Power Plants with a capacity **up to 5 MW shall not be required to provide day – ahead wheeling schedule and the actual electricity**	• Under Purview of Hon'ble Commission

injected by them shall be deemed to be the schedule energy. In this regard, I **humbly request this Hon'ble Commission to continue the day-ahead scheduling this for plants below 5 MW capacity in the future as well**, to ensure operational ease and financial viability for small-scale generators.	
Article 7.2 – Measurement of Energy Clause 7.2.7: As per the **Central Electricity Authority (CEA) regulations**, all **consumer meters** and **interface meters** must be tested **at least once every five years** by a **NABL-accredited laboratory**. Furthermore, such testing is also required whenever the meter readings are found to be abnormal or inconsistent with adjacent meters. In this context, I respectfully request this Hon'ble Commission to **clearly specify this five-year periodicity for meter testing under Clause 7.2.7**, in line with CEA regulations. This clarity will help **eliminate any ambiguity or misinterpretation between DISCOMs and Solar Power Generators (SPGs)**, ensuring uniformity and regulatory compliance across all stakeholders.	• The same has been mentioned as per previous solar PPAs which were approved by TGERC
Article 9: Applicable Tariff At present, as per the Hon'ble Commission's Order in (RP) No. SR.19 of 2021, the **levelised tariff** has been fixed at **Rs. 3.13/unit**, wherein the **Operation and Maintenance**	The proposed rate of Rs. 3.13/kWh was determined based on the prevailing market rates of panels and other materials for solar power, assuming a project cost of Rs. 3.6 Crores, during the year 2021. With advancements in technology, the cost of solar panels has decreased, and

(O&M) cost was considered as **Rs. 0.045 Crore (i.e., Rs. 4.5 lakhs) per MW per year**.

However, under current market conditions and actual operational experience, the **O&M expenses have significantly increased** and are much higher than the value previously considered. A detailed breakdown of actual O&M expenses for a 1 MW plant is provided below:

S.No.	Description of expenses	amount per month	amount per year
1	Technical expertise	10,000.00	1,20,000.00
2	site supervisor	20,000.00	2,40,000.00
3	module cleaning and gross cutting staff	30,000.00	3,60,000.00
4	PQT test		1,50,000.00
5	MPLS connection for real time data to sldc		1,20,000.00
6	ceig fee		9,000.00
7	electricity bill	25,000.00	3,00,000.00
8	miscellaneous regarding employees welfare	2,000.00	24,000.00
9	Total O&M expenses per year		13,23,000.00

their efficiency has increased. However, TGDISCOMs will adhere to the price determined by the Honourable TGERC.

In light of the above, I respectfully request this Hon'ble Commission to **reconsider and revise the O&M cost component used in tariff determination**, and accordingly **re-evaluate the levelised tariff** to reflect the actual, justifiable, and escalating costs incurred by Solar Power Generators (SPGs). This revision is crucial for the financial viability and long-term sustainability of solar power projects, particularly those established by farmers and small developers under schemes like PM-KUSUM.	
Article 10: Auxiliary Consumption, Reactive Energy, Sharing of CDM benefits and harmonics: **Clause 10.3 – Harmonics** As per the **CEA (Central Electricity Authority) Guidelines** on Power Quality Requirements for Solar Power Plants, and as outlined in the **CEA (Technical Standards for Connectivity to the Grid) Regulations, 2013**, the following key conditions are prescribed: • **Harmonic current injection** from a generating station shall not exceed the limits specified in **IEEE Standard 519**. • **DC current injection** shall not exceed **0.5%** of the full rated output at the interconnection point. • The generating station shall not introduce **flicker** beyond the limits specified in **IEC 61000**.	• Auxiliary consumption clause has been incorporated as per the existing Solar PPAs approved by TGERC

I would like to bring to the kind notice of this Hon'ble Commission that **DISCOMs are presently insisting** that Solar Power Generators (SPGs) submit detailed power quality parameters such as: • **Individual Voltage Harmonics** • **Total Harmonic Distortion (V)** • **Total Demand Distortion(I)** • Along with compliance to the above-mentioned standards This requirement is being extended even to **SPGs established under the PM-KUSUM scheme**, which are typically connected at the **11 kV voltage level**—a level that is also widely used for connecting **agricultural loads**, which are known to introduce harmonics into the system. Currently, during **Power Quality Testing (PQT)**, the harmonic measurements are being taken only on **generating station feeders**, while the other connected feeders (carrying agricultural and mixed loads) continue to introduce harmonics into the system. This results in **ambiguous test outcomes** and leads to **disputes between SPGs and DISCOMs**, as SPGs are being held accountable for harmonics that may originate elsewhere on the system. **Therefore, I respectfully request this Hon'ble Commission to:** 1. **Appoint a qualified expert committee or technical team** to study and identify the actual sources of harmonics in such mixed-load feeder environments.	

2. **Specify and standardize the parameters** to be tested during PQT, ensuring that SPGs are not unfairly held responsible for harmonic distortions caused by other non-SPG loads connected on the same 11 kV feeders. 3. Establish a **clear testing protocol and threshold criteria** for SPGs, with due consideration to the operational realities of rural feeders under the PM-KUSUM scheme. Such a clarification and expert-driven standardization will **ensure fairness, avoid technical misinterpretations**, and support the smooth commissioning and operation of solar plants in compliance with national standards. **Clause 10.4 – Auxiliary Consumption** As per the current provisions in the Power Purchase Agreement (PPA), the **Solar Power Generator (SPG)** is entitled to draw power from the DISCOM for **auxiliary consumption**, limited to **0.1% of the installed capacity** of the plant. The PPA also provides that: • **Net Energy = Energy delivered at the interconnection point – Energy drawn from DISCOM for auxiliaries** • Any auxiliary power consumption exceeding the 0.1% limit shall be **billed on a kVAh basis** under the **HT-1 consumer tariff**, as notified by the TGERC. I respectfully bring to the kind notice of this Hon'ble Commission that the **practical auxiliary power requirement of a 1 MW solar power plant is significantly**	

higher than the allowed 0.1%. A typical breakdown is as follows:

DESCRIPTION	QTY	UNIT	INSTALLED CAPACITY	UNIT	0.10%	UNIT
MAXIMUM DEMAND	18	KVA	1000	KW	1	KW
NO.OF UNITS REQUIRED	1500	KVAH	137500	KWH	137.5	KWH

The Approximate Electricity bill per the month as per PPA 0.1% limit:

DESCRIPTION	QTY	UNIT	RATE	AMOUNT
DEMAND CHARGES NORMAL	1	KVA	500.00	500.00
DEMAND CHARGES PENAL	17	KVA	1,000.00	17,000.00
ENERGY CHARGES AS PER PPA LIMIT	137.5	KVAH	3.13	430.38
ENERGY CHARGES PER BALANCE(EXCEEDS THE 200% OF CMD)	1362.5	KVAH	8.58	11,690.25
Total Monthly bill				29,620.63

As referenced in the **International Journal of Current Engineering Technology**, and based on **field data from operational plants in the state**, it is observed that: • The **average auxiliary consumption for solar plants up to 5 MW is approximately 1.5%**, and • The **demand typically ranges from 18 kVA to 25 kVA**, even for smaller installations under 5 MW. The existing **0.1% cap is highly impractical** and leads to significant **monthly financial burden**, disproportionately affecting **small-scale SPGs**, particularly those set up by farmers under the **PM-KUSUM scheme**. I therefore humbly request this Hon'ble Commission to: 1. **Revise the allowable auxiliary consumption to 1.5%** of the installed capacity. 2. **Eliminate Maximum Demand (MD) Charges** for solar plants, considering they are **"Must Run" stations** operating for grid benefit. 3. **Permit auxiliary consumption to be adjusted directly from the exported units**, i.e., **Net Energy = Gross Generation – Auxiliary Consumption**, rather than charging it as separate import. These modifications will **greatly support the financial viability and operational sustainability** of farmer-led	

decentralized solar projects under PM-KUSUM, while aligning with national renewable energy goals.	
Clause 11.4 – Late Payment Surcharge As per the current provisions of the Power Purchase Agreement (PPA), the **Late Payment Surcharge (LPS)** becomes applicable **only after 30 days** from the date of invoice submission by the Solar Power Generator (SPG). In practical implementation, the **SPG typically raises invoices in the first week of every month**. If the DISCOM utilizes the full 30-day payment window, the SPG is **compelled to manage at least one month's EMI payment to banks from their own working capital**. This situation creates a **cash flow burden**, particularly for small and marginal SPGs—including farmers and cooperatives operating under schemes like **PM-KUSUM**—who may not have access to significant reserves or flexible credit.	• 30 days has been mentioned as per MNRE Model PPA

5. **Replies to Comments from Sai Pavan Atmakur on the petition by TG DISCOMs for consent for procuring 4000 MW distributed solar (including 1000 MW for SHGs)**

Query / Suggestion / Comments	Rationale by TG DISCOMs
I am writing to you in my capacity as a financial analyst and the son of a farmer. I attended the public hearing held at your office on April 17, 2025, where I raised concerns regarding the financial challenges faced by small farmers in Telangana who wish to apply for Grid-Connected solar power projects under the PM KUSUM Component-A, specifically for 500 KW installations with limited capital. I am now submitting this written request to further elaborate on these difficulties. I would like to acknowledge the efforts of the Chairman, TGERC, TGREDCO, and the Discoms in bringing the PM KUSUM Component-A to Telangana. This initiative holds significant promise in generating a stable long-term income for small farmers and reducing poverty if implemented effectively. We have three applications filed by my cousins, demonstrating interest within our farming community. I wish to represent the case of a small farmer who owns 2 acres of land located within a 5 KW radius to the 33/11 substation. This farmer is prepared to invest a substantial portion of his lifetime savings, ranging from ₹20 to ₹25 lakhs (his current annual income is ₹3 to ₹4 lakhs), to secure a modest yet stable income without having to sell his land. He is also willing to personally oversee the plant as a watchman and undertake the cleaning of the solar panels to minimize operational costs. His primary expectation is to generate a sustainable income for his livelihood from this investment for the next 25 years. Attached is a detailed financial model outlining the monthly EMIs is attached for your review. I see	• The main objective of PM-KUSUM Component A is to promote the installation of grid-connected solar power plants on barren or uncultivable land by farmers and other entities like cooperatives and FPOs. This component aims to increase the capacity of solar energy in India and enhance farmers' income by allowing them to sell excess power to DISCOMS. • Farmers can earn additional income by selling the excess solar power generated to DISCOMS (Electricity Distribution Companies) at a predetermined rate. The guidelines outlined by MNRE have been followed for most of the aspects including the penalty clause. TGREDCO already has district nodal officers/ district managers stationed in each of the districts. Hence any facilitation support can be availed from the above officers. Additionally TGREDCO website also provides the details of the concerned officers.

the farmer earns 45K per month (income of 20K per month as salary and 25k Interest (1%) for 25 lakhs investment) from this project. Unfortunately, the State Bank of India (SBI) and other bankers are currently unconvinced about the financial viability of such projects for small farmers. They are hesitant to provide Page 2 of 3 loans for the above farmer, expressing concerns about the fact that the projects is NOT viable and will lead to a Non-Performing Assets (NPAs). Below are the illustrations which are NOT in sync and will present the ground reality of the understanding with bankers at the time of loan disbursement. 1. Bankers do not agree with the financial illustration created based on my understanding for 500KW (attached is the excel spreadsheet) 2. I have got this financial illustration from SBI Bank for 1000KW (attached is the SBI Manager Illustration) 3. Meeting minutes and financial information from TGREDCO for 1000KW held on 22nd March 2025 (attached is the TGREDCO MOM) Therefore, I respectfully request the esteemed panel, along with financial experts from TGREDCO and Discoms, to collaboratively develop a viable financial model in conjunction with the banking sector. This model should aim to ensure long-term financial sustainability and provide a stable income from day one, for small farmers in Telangana who wish to participate in the PM KUSUM Component-A. Furthermore, I also urge the Discoms to actively engage in making this scheme a success for small farmers. Simply offering ₹3.13 per KWH and imposing stringent penalty clauses in the Power Purchase Agreements (PPAs), which are often difficult for farmers to comprehend initially, is insufficient. This scheme places an additional responsibility on Discom officers to facilitate the transition of our "Anna Dhata" (food provider) to "Surya Shakti Dhata" (solar power provider) effectively, without inadvertently pushing vulnerable	

small farmers into deeper financial hardship in the long run. I deeply appreciate the tireless efforts of officers across various departments who are working towards a sustainable future for our society and striving to provide consistent income opportunities for our farmers in Telangana. As a representative of small farmers, I humbly request continued and enhanced handholding support from the concerned officers to ensure the successful implementation and accessibility of PM KUSUM Component-A for those with limited capital. Thank you for your time and consideration of this important matter, which I discussed during the public hearing in TGERC office on 17th April. I remain available for further discussion, or any additional support needed to make this project viable for Telangana's small farmers and contribute to green energy for future generations.	