ANDHRA PRADESH ELECTRICITY REGULATORY COMMISSION

Vidyut Niyantrana Bhavan,

Adjacent to 220/132/33/11 KV AP Carbides Sub-Station,

Dinnedevarapadu Road, Kurnool-518002, Andhra Pradesh

***

FRIDAY, THE 2nd DAY OF MAY

TWO THOUSAND AND TWENTY FIVE

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Present

Sri P.V.R.Reddy, Member & Chairman(i/c)

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<u>O.P.No.91 of 2024</u>

In the matter of granting consent under Section 861(b) of the Electricity Act, 2003 read with Section 21 of the Andhra Pradesh Electricity Reform Act, 1998 to the amended Power Purchase Agreements (4 Nos) dated 12.03.2025 entered into by Southern Power Distribution Company of Andhra Pradesh Limited (APSPDCL) with the following entities: 1. Axis Renewable Energy Park (Penna) Private Limited, 2. Axis Renewable Energy Park (Krishna) Private Limited, 3. Axis Renewable Energy Park (Andhra Pradesh) Private Limited, and 4. Axis Renewable Energy Park (Tungabadhra) Private Limited, for procuring 100 MW of power each from their Wind-Solar Hybrid Pilot Projects.

Between:

Southern Power Distribution Company of Andhra Pradesh Limited,

Srinivasapuram, Tiruchanoor Road, Tirupati-517503, Andhra Pradesh.

...Petitioner

And

1. Axis Energy Ventures India Private Limited.
2. Axis Renewable Energy Park (Penna) Private Limited.
3. Axis Renewable Energy Park (Krishna) Private Limited.
4. Axis Renewable Energy Park (Andhra Pradesh) Private Limited.
5. Axis Renewable Energy Park (Tungabhadra) Private Limited.

...Respondents

This Petition was taken up for final hearing on 04.04.2025 in the presence of Sri K. Ramakrishna, AP State Secretary, CPI; Sri Ch. Babu Rao, State Secretariat Member, CPI (M); Sri M. Venugopala Rao, Senior Journalist & Convener, Centre for Power Studies; Sri Kandharapu Murali, Secretariat Member, CPI (M), Tirupati District Committee; Sri M.V. Anjaneyulu, Convener, Vidyut Viniyogadarula Ikya Vedika; Sri Ajay Devaraj, Secretary General, Indian Wind Power Association; Sri B.Dasarath Ram, Secretary, New Directions Educational Society; Sri Subrahmanyam Pulipaka, Chief Executive Officer, National Solar Energy Federation of India; Sri Suman Kumar, Chief Executive Officer, Evren (Brookfield Renewable); Sri P.Shiva Rao, learned Standing Counsel for APSPDCL; Sri K.Santhosha Rao, Chairman and Managing Director, APSPDCL; Sri P.H.Janaki Ram, Chief General Manager/P&MM, APSPDCL; Sri Murali Surapaneni, CEO, Axis Energy Ventures India Private Limited; and Sri Deepak Chowdhury, learned Counsel for the respondent- Axis Energy Ventures India Private Limited. After hearing all the parties and after carefully considering the material available on record, the Commission passes the following:

<u>ORDER</u>

1. Vide letter dated 24.09.2024, the GoAP issued a directive to the Andhra Pradesh Electricity Regulatory Commission (APERC) under Section 108 of the Electricity Act, 2003, to give consent to the four 100 MW Power Purchase Agreements (PPAs) signed by the Southern Power Distribution Company of Andhra Pradesh Limited (APSPDCL) with the Special Purpose Vehicles (SPVs) of Axis Energy Ventures India Private Limited (AEVIPL) for the 400 MW wind-solar hybrid pilot project under the Bundling, Balancing, and Banking (BBB) scheme, aligning with the state's commitment to generate 72.30 GW of renewable energy by 2030, as part of India's 500 GW target. The PPAs execution is in pursuance of the 2018 MoU and a 2019 Scheme Implementation Agreement(SIA), and offer a high Capacity Utilisation Factor(CUF) (over 60%), stable APPC tariffs, 50:50 REC benefit sharing, and local economic benefits. The directive reinforces the commitments made by the GoAP in an affidavit before the High Court of AP to honour agreements and also to attract investments, while utilising state infrastructure and meeting Renewable Purchase Obligations (RPO).

2. Subsequently, APSPDCL, the petitioner in this case, has entered into the PPAs with the respondents Nos. 2 to 5 on 24.11.2022 for the procurement of 100 MW of power each from their respective Wind-Solar Hybrid Pilot Projects. The respondents Nos. 2 to 5 are the SPVs of AEVIPL, the first respondent in this Petition.

3. Subsequently, the petitioner filed a Petition before the Commission on 22.11.2024 under Section 86(1)(b) of the Electricity Act, 2003 (referred to as "the Act") read with Section 21 of the Andhra Pradesh Electricity Reform Act, 1998 seeking consent for the above PPAs (which includes tariff) and submitted the the following as justification.

- The Government of Andhra Pradesh (GoAP), in order to promote wind-solar hybrid projects, has issued the Andhra Pradesh Wind-Solar Hybrid Power Policy, 2018 ("the Policy, 2018") vide: G.O.MS. No. 3 dated 03.01.2019, which provides a framework for promoting large grid-connected wind-solar PV systems to efficiently utilise state transmission infrastructure and land, reduce variability in renewable power generation and to achieve better grid stability. Under "the Policy, 2018", various incentives/benefits were provided for the development of Wind Solar Hybrid Plants in the State, and the projects with a minimum stipulated CUF of 40% were to be given preference. The said Policy also provides for the sale of the power from the Wind Solar Hybrid Projects to the Distribution Companies (DISCOMs) in the State at the APPC tariff under the REC mechanism.

- Accordingly, the GoAP has taken an initiative and proposed to the Government of India for the implementation of 5,000 MW of Green Power round the clock consisting of 5,000 MW Solar, 5,000 MW of Wind coupled with 5000 MW of Gas Power with an objective of integrating various Renewable Energy generations along with clean energy sources into a single system.
- On 01.01.2018, AEVIPL proposed to the GoAP for the development of 10,000 MW of renewable energy projects (5,000 MW wind and 5,000 MW solar) within the state. Following this, AEVIPL, APTRANSCO, and NREDCAP signed a Memorandum of Understanding (MOU) on 26.02.2018, at the Partnership Summit in Visakhapatnam, formalising their intent to develop these projects.
- In line with the MOU, AEVIPL later proposed a Scheme Implementation Agreement (SIA) for the 5,000 MW renewable energy projects and requested approval for a 400 MW pilot project. The GoAP subsequently referred both proposals to the Finance (FMU, Energy, I&I) Department.
- Based on the advice of the Finance Department, the Energy, I&II (Power.II) Department constituted a Technical Committee on 05.10.2018, vide G.O.Rt.No. 134, to assess the draft SIA between AEVIPL and relevant government stakeholders. Considering the Technical Committee's recommendations, the GoAP, through the letter dated 23.01.2019, instructed APPCC, APTRANSCO, APGENCO, APDISCOMs, and NREDCAP to execute the SIA with AEVIPL. Additionally, the APDISCOMs were permitted to procure power from the pilot project under a "first right of refusal" and to execute PPAs at a tariff not exceeding the "Power Purchase Pooled Cost" (PPPC) under the

REC mechanism, as outlined in Clause-5.4 of the SIA and Clause-5.2(i) of "the Policy, 2018." This approach was adopted due to the absence of standard bidding guidelines for wind-solar hybrid and Firm and Dispatchable Renewable Energy (FDRE) projects. Consequently, the SIA was executed on 23.01.2018.

- As per the SIA guidelines, APPCC approved AEVIPL's 400 MW pilot project to demonstrate the Bundling, Balancing, and Banking (BBB) Scheme. The SIA stipulated that the entire 5,000 MW renewable energy project (5000 MW wind and 5000 MW solar) would be developed progressively in three phases, as detailed in Clauses 4.1.1 to 4.1.3 of the SIA, with Clause 5 outlining the obligations of AEVIPL and the APDISCOMs.
- Subsequently, AEVIPL submitted a Detailed Project Report (DPR) to APPCC/APTRANSCO, outlining the pilot project's development, and submitted draft PPAs for the 400 MW projects on 22.03.2019, for APTRANSCO's review. On 01.04.2019, the Chief Engineer/IPC&PS/VS/Vijayawada referred the DPR and draft PPAs to KPMG Consultancy Service, Vijayawada, for evaluation in consultation with the SLDC Wing, requesting their recommendations for further action.
- Following this evaluation, the Chairman of APPCC/APTRANSCO, in consultation with the Department of Energy, GoAP, and KPMG Consultancy Services, approved the 400 MW pilot project under the BBB Scheme and the draft PPAs with KPMG's proposed changes. The APDISCOMs were then directed to sign the PPAs. Furthermore, NREDCAP issued the necessary approvals to AEVIPL for setting up the 400 MW wind-solar hybrid power project, with the registration initially valid until 16.04.2021, and later extended to 21.09.2025.
- Subsequent to the SIA, policy changes introduced by the GoAP through G.O.MS No. 35 dated 18.11.2019, and G.O.Ms. No.1 dated 01.03.2021,

impacted the committed projects. In response, AEVIPL filed Writ Petition No. 9680 of 2021, challenging the government's actions, and other developers also initiated similar legal proceedings.

- The GoAP later filed a Common Additional Affidavit in the High Court of Andhra Pradesh, affirming its decision to honour the existing agreements, including Project Implementation Agreements, Project Agreements, and Scheme Implementation Agreements made by the Government, NREDCAP, and Power Utilities. The government also committed to upholding the incentives provided to developers under the Wind, Solar, and Wind Solar Hybrid Policies of 2015 and 2018, which predated G.O.Ms.No.35. The government further assured the court that it would issue necessary directives to the APDISCOMS, APTRANSCO, NREDCAP, and AP Power Utilities to implement these commitments.
- Acknowledging the undertaking presented in the Common Additional Affidavit, the High Court of Andhra Pradesh disposed of Writ Petition No. 9680 of 2021, along with W.P. No. 13374 of 2020 and other related petitions, on 16.08.2022. Following this court order, the Special Chief Secretary to the Government of Andhra Pradesh, Energy Department, instructed the Chairman and Managing Director of APSPDCL on 11.11.2022, to act upon AEVIPL's request for the execution of four PPAs (each for 100 MW with its Special Purpose Vehicles - SPVs) in accordance with government directives and the High Court's orders.
- Consequently, APSPDCL executed the four PPAs with AEVIPL's SPVs on 24.11.2022, for a total capacity of 400 MW (100 MW each). NREDCAP had already sanctioned project capacities of 640.5 MW for wind and 400 MW for solar for this 400 MW project. APTRANSCO also granted grid connectivity approvals for evacuating 1040.5 MW (640.5 MW wind + 400 MW solar) on 24.03.2023, and subsequently submitted the PPAs to the Commission for approval on 30.05.2023.
- However, APERC returned the four draft PPAs to APSPDCL on

11.07.2023, seeking clarifications on: (a) the justification for procuring wind-solar hybrid capacity, (b) the rationale for the fixed pooled cost of power purchase, (c) the rationale for a 25-year PPA duration in light of APERC's advice dated 16.09.2023, and (d) the reasons for not including the MoU, DPR, KPMG report, and IPC/APTRANSCO analysis.

- APSPDCL then prepared a detailed justification report and submitted it to the APPCC on 25.06.2024. Subsequently, the Special Chief Secretary to the Government, Energy Department, communicated the minutes of a review meeting held by the Honourable Chief Minister on 14.08.2024, regarding the Power Sector, granting permission to APSPDCL to file responses to the Commission's queries on the 400 MW wind-solar hybrid PPAs, via a letter dated 01.10.2024.
- Following these directives, APSPDCL furnished its replies to the Commission's remarks on 13.11.2024 and requested approval for the aforementioned four PPAs.
- The PPAs were necessitated to be executed with the respondents Nos. 2 to 5 to comply with a High Court Order dated 16.08.2022 in WP 9680 of 2021. The High Court's Order followed the government's affidavit stating its intent to withdraw the case and honour commitments made in various agreements, Orders, letters, and MOUs related to AEVIPL's projects.
- The energy generated from these Projects was included in the State Electricity Plan (FY 2023-24 to FY 2033-34). This inclusion was based on a short-term load forecast (FY 2023-24 to FY 2028-29), which projects an increase in peak demand from 12.26 GW in 2023 to 19.70 GW in 2029.
- These 400 MW pilot projects were envisioned to supply round-the-clock (RTC) power, aligning with the GoAP's RTC green power scheme under the Bundling, Balancing, and Banking (BBB) Scheme. Implementing these projects will assist DISCOMs in meeting their Renewable Power

Purchase Obligation (RPO) targets set by APERC Regulation 5 of 2022, which mandates an increase from 18% in 2022-23 to 24% by 2026-27. Additional renewable energy projects are needed to reach this 2027 goal.

- Beyond the APERC's RPO targets, the Ministry of Power (GoI) issued an Order on 20.10.2023, outlining Renewable Purchase Obligation and Energy Storage Obligation targets until 2029-30. This Order emphasises the national commitment to achieving Net-zero emissions by 2070, requiring states to align with the MoP's RPPO trajectory, which mandates a 43.33% RPPO by 2030.
- The Ministry of Power (Government of India) utilises Renewable Purchase Obligations (RPOs) to achieve the Intended Nationally Determined Contributions (INDCs) and encourage the deployment of renewable energy. The goal is to meet at least 43.3% of the country's power demand from renewable sources by 2030.
- A NITI Aayog report from February 2024, titled "Renewable energy resource adequacy planning to meet RPO by the states in India," outlines the state-wise electricity demand that needs to be met by renewable energy. The report indicates that Andhra Pradesh needs to add 2.66 GW of wind capacity, 11.46 GW of solar capacity, and 1.47 GW of hydro capacity.
- The proposed Wind-Solar Hybrid projects are expected to achieve a high annual Capacity Utilisation Factor (CUF) of over 60%, which is beneficial as it ensures continuous power availability. This helps DISCOMs to reduce the burden of balancing loads and improve grid stability.
- The signed Power Purchase Agreements (PPAs) incorporate the APPC mechanism, a well-established power procurement practice in the state. Additionally, the PPAs include strict penalties for any shortfall in the agreed-upon CUF, which benefits the State and compels the

developer for better and assured performance. To protect the interests of DISCOMs and end consumers, the developer was subjected to very strict terms and penalties compared to standard PPAs under the APPC mechanism.

- Despite the Andhra Pradesh Wind Solar Hybrid Power Policy 2018 requiring only a 40% minimum CUF, these PPAs mandate a 60% minimum. Furthermore, the project tariffs will remain fixed for 25 years, providing DISCOMs with stable power procurement costs.
- Renewable Energy Implementing Agencies (REIAs) projects are currently exempt from Inter-State Transmission System (ISTS) charges, a cost that is socialised and partially borne by states, including AP. This means tariffs for non-ISTS-waiver eligible bids will be effectively higher by Rs 0.95 - Rs 1.28 per kWh. This ISTS waiver ends for projects commissioned after June 30, 2025, after which developers will bear the full charges, further increasing tariffs from REIA bids by the same range.
- The power generated from this project will be entirely evacuated through the State Transmission Utility (STU) network. This ensures that there will be no direct or indirect additional financial burden on the DISCOMs. Utilising the existing State evacuation infrastructure for these projects also ensures the efficient and optimal use of the State Grid.
- During the recently concluded RE Invest 2024, a major event organised by the Ministry of New and Renewable Energy (MNRE), the Government of Andhra Pradesh committed to developing 72.60 GW of Renewable Energy projects by 2030. This 400 MW BBB project, with an installed capacity of 1040.5 MW, will significantly contribute to the State achieving this ambitious renewable energy target. Further, under Section 86(1)(e) of the Electricity Act, 2003, the Commission is mandated to promote Renewable Energy sources.

4. The Commission has taken the Petition on record, numbered it as O.P.No.91 of 2024, issued notice to the parties and posted the matter for hearing on 22.01.2025. During the subsequent hearing on 29.01.2025, the Commission felt that since this OP relates to approval of the PPAs and determination of tariff, the same must be placed in the public domain. Therefore, the Commission directed the office to place a notice along with the material available on record on the Commission's website calling for objections from all stakeholders. Further, the Commission directed the petitioner to carry out publication of the Petition in two widely circulated newspapers, one in Telugu and the other in English, of the Andhra Pradesh Editions and directed APTRANSCO to file its response on Banking and Balancing issues involved in the OP.
5. The Commission's office posted a copy of the petition on the Commission's website on 29.01.2025, inviting comments, views, and objections from interested persons and stakeholders, to be submitted by 18.02.2025. The Petitioner published a notice of the petition in newspapers on 02.02.2025, seeking comments and objections from interested parties, to be submitted to the Commission Secretary by 16.02.2025. Subsequently, APTRANSCO submitted its response to the Commission Secretary on 17.02.2025, stating that they are not in a position to balance the renewable energy intermittency or provide banking services. During the hearing on 07.03.2025, the Commission permitted APSPDCL to file amended Power Purchase Agreements (PPAs) in light of APTRANSCO's response. APSPDCL filed the revised PPAs before the Commission on 13.03.2025, which were then posted on the Commission's website, inviting comments/views/objections from interested persons and stakeholders, to be submitted by 18.03.2025. At the request of some objectors, the deadline for submissions was later extended to 25.03.2025.

Objections/suggestions/views(including APTRANSCO's) received, replies of APSPDCL and Axis Energy Ventures India Private Limited (AEVIPL).

(A list of objectors is shown vide Annexure)

By the deadline of 25.03.2025, the following comments/views/objections were received from various stakeholders/interested persons on the original and amended PPAs.

6. **<u>APTRANSCO</u>**

- The BBB scheme in the state is meant to bundle renewable energy projects with conventional power plants (originally gas-based) to manage the intermittent nature of renewable energy, following the Ministry of Power's Flexibility scheme guidelines from 2018.
- However, the state currently has no operational gas power plants. Consequently, APTRANSCO is not in a position to balance the renewable energy intermittency or provide banking services.

<u>Reply of APSPDCL</u>:

- The responsibility of delivering the stipulated generation lies with the developer, who should set up Energy Storage Technologies. The Commission is requested to mandate the developer to ensure peak hour supply for 2 hours each in the morning and evening (7:00-11:00 and 18:00-22:00 Hours) by installing appropriate Energy Storage Technology, similar to FDRE projects, and ensure 90% availability of the contracted 400 MW during these peak hours.
- Regarding tariff, it is submitted that the APPC tariff applicable 24 months from the original approval date of the draft PPAs by the APPCC (15.05.2019), which falls in FY 2021-22, be considered. This would be Rs 4.60 per kWh as per APERC's Order in OP Nos. 14, 15, and 16 of 2022 dated 27.05.2022, instead of the current APPC tariff for FY 2023-24 (Rs 5.12 per kWh) or the expected higher tariff in 24 months

from the current date of approval. This will be in the best interest of consumers and is comparable to the tariff of similar FDRE projects (Rs 4.64 to Rs 4.73 per kWh).

Reply of AEVIPL:

Given APTRANSCO's inability to provide balancing or banking due to the lack of operational gas power plants, AEVIPL proposes using Energy Storage Technologies to meet PPA conditions. To accommodate this change, AEVIPL requests the following modifications to the PPAs.

- Provision for firm power for 2 hours during morning and evening peak hours by installing an appropriate Energy Storage System, aligning with Firm and Dispatchable Renewable Energy (FDRE) guidelines. AEVIPL will ensure 90% availability of contracted capacity during these hours.
- Maintaining the 500 MW power evacuation capacity, with Delivered Energy calculated for the 400 MW contracted capacity.
- Above 500 MW, prioritising supply to APDISCOMs with Right of First Refusal, then selling to third parties or power exchanges.
- Use of existing infrastructure for charging and delivering power from storage systems without additional charges.
- Allowing a one-time change in the RE configuration until the Commercial Operation Date (CoD) without altering PPA responsibilities.
- Proposal for a more granular penalty structure for not meeting the 60% CUF or penalties similar to FDRE guidelines for non-delivery of power during peak hours.
- Applying the Electricity (Late Payment Surcharge and Related Matters) Rules, 2022.
- Clarification on how Delivered Energy is calculated.
- Maintaining the validity of PPAs under APPC mechanism as per existing regulations.
- Acceptance of the APPC tariff determined for FY 2021-22 (Rs 4.60/

kWh) for the entire 25-year project life.

- Note that the proposed APPC tariff is on par with FDRE bid tariffs.

The project offers high CUF availability, no financial burden for ISTS transmission charges, tax revenues to the state, local employment generation, and strengthening of the state evacuation facility. The power from this project was considered in DISCOMs' supply forecast but not in the Commission's forecast, which APSPDCL has requested to include. AEVIPL requests the Commission to consider these points and approve the PPAs.

7. **<u>Sri M. Venugopala Rao/Centre for Power Studies and 3 others</u>**

- The 2018 MoU, 2019 SIA, and 2019 AP Wind Solar Hybrid Policy are outdated and can't be applied retroactively. The 2024 AP Integrated Clean Energy Policy superseded them, explicitly stating that previous policies, including the 2019 Wind Solar Hybrid Policy, are no longer valid.
- APSPDCL's reliance on the Commission's 2017 Regulations is misplaced, as there were no GoI bidding terms or draft PPAs specifically for wind-solar hybrid projects at that time. These outdated regulations are also irrelevant for drafting the current PPAs and determining APPC tariffs.
- Competitive bidding is a viable alternative to MoU-based PPAs, which historically caused consumer burden and legal battles. The prolonged seven-year delay also indicates the DISCOMs haven't needed the power in question. DISCOMs have the option of competitive bidding for any new RE capacity addition, which would ensure the lowest possible tariffs. Earlier, DISCOMs have sought and obtained APERC's approval to select wind power projects through competitive bidding, instead of relying on generic tariffs set by the Commission. No law prevents DISCOMs and the GoAP from choosing competitive bidding, provided they obtain APERC's approval for the terms and conditions. They can

also seek the Commission's approval to modify the terms of competitive bidding issued by the Government of India. Even without central government bidding documents, the state could have invited and negotiated with multiple developers for hybrid projects.

- The GoAP's direction is an overreach of governmental authority and an intrusion into the Commission's regulatory domain. The tariff determination and PPA approval, based on relevant factors and regulations, fall under the Commission's purview. The commission is not obligated to approve the PPAs unless there is a demonstrated need for this power. Judgments from the Karnataka High Court and the Supreme Court emphasise regulatory independence from government directions.
- In earlier Orders, the Commission directed DISCOMs that they must comply with the higher of the Renewable Purchase Obligation (RPO) trajectory set by APERC and the Renewable Energy Consumption (REC) specified by the Ministry of Power (MoP). The above directions represent a surrender of the Commission's quasi-judicial regulatory powers to the central government. The RPO targets specified by the MoP are merely guidelines and not binding on the Commission.
- RE availability is projected to exceed targets. Integrating RE requires grid upgrades and managing real-time supply-demand balance, impacting thermal plants. Consumers face higher costs due to underutilised thermal power and expensive short-term power purchases.
- APSPDCL has not clarified how APDISCOMs will meet their RPPO, considering the RE available and to be available from existing long-term PPAs. APDISCOMs are ignoring the earlier APERC's directive that future power requirements, except for existing project expansions, should be procured competitively.
- The need for incremental capacity could decrease or become

unnecessary if the actual power requirement is lower than projected in the long-term load forecast and power procurement plan approved by APERC for the 5th control period

- Whether the project would "bank" the excess generation beyond the contracted capacity with the APSPDCL, assuming the DISCOM doesn't need it during peak hours? If SPDCL allows AEVIPL to bank excess generation, SPDCL may have to back down thermal power, incurring fixed charges and increasing the burden on consumers. The decision to store excess power is left to AEVIPL, who may prefer banking with SPDCL (at SPDCL's cost) over incurring storage expenses.
- The proposed graded tariffs, with a high price of Rs. 3.82 per unit for power generated below 40% CUF, make the 60% CUF target seem unrealistic. The "must-run" status of the plants could force the DISCOM to purchase unneeded power. The graded tariff structure, where lower CUF levels receive higher prices, is contrary to standard practice. The tariff adjustments based on CUF are a "pampering" mechanism for the developer rather than a "penalty."
- APPC is primarily used by the Commission to determine payments to RE developers for power banked with DISCOMs but not reclaimed within the year. APPC is an average of tariffs from various PPAs, while competitive bidding yields prices discovered through actual market competition. Project-specific factors like capital costs, execution timelines, technology, fuel, and transportation costs should determine tariffs, not APPC. Tariff comparisons should only be made between similar projects executed under similar conditions.
- What is the rationale behind needing four units of the same capacity for a pilot? Surely, a single, smaller unit would be sufficient for initial testing and learning.
- While late payment surcharges exist, no rebates are offered for early payment. There is a lack of a storage facility proposal in the PPA.

- The proposed tariff for the projects is significantly higher than the latest and lowest tariffs discovered through competitive bidding for standalone wind and solar projects. Given that ISTS charges are not applicable to these in-state projects, their tariffs should logically be significantly lower than those discovered in FDRE bids. The same high tariff is applied to power supplied during both peak and off-peak hours by the projects. Storage systems could be implemented for individual solar and wind power units, allowing the purchase of cheaper power generated during non-peak hours based on competitive bidding tariffs. The cost of storage could be calculated separately.
- Approving the petition would set a bad precedent, potentially leading to a flood of similar long-term PPAs based on the 2018 MoU, including the remaining proposed 10,000 MW. The Commission is urged to reject the current petition and instead direct the DISCOM to conduct genuine competitive bidding for any required wind-solar hybrid projects, even for pilot projects with the smallest possible capacity. This bidding process should ensure broad participation of developers, including APGENCO, and provide a level playing field.
- The Rs.3.45/unit payment for infirm power is excessive and unjustified, favouring AEVIPL at consumer expense. A nominal Rs.0.25/unit is sufficient to protect consumers.
- The 50% REC value sharing with AEVIPL is unfair and anti-consumer, favouring developers who face no RPPO burdens and the DISCOMs should receive 100% REC value to protect consumer interests.
- The revised "Project" definition grants excessive flexibility to AEVIPL, allowing changes to wind-solar configurations and locations until COD.
- The reliance on APPC for tariffs is irrational, leading to excessive costs, consumer burdens, and undue developer benefits. APSPDCL failed to justify the revised Rs. 4.60/unit.
- The PPAs' Rs.4.60/unit tariff, uniform for peak and non-peak power,

imposes a potential Rs. 9,198 crore burden over 25 years, far exceeding market rates (Rs.2.50–Rs.3.00/unit).

<u>Reply of APSPDCL</u>:

- APSPDCL followed all legally available processes to execute the contracts. The projects underwent several rounds of evaluation. The objectors have failed to demonstrate how the process was legally incorrect or how the projects would harm consumer interests.
- While the Wind Solar Hybrid Policy 2019 expired after the AP Integrated Clean Energy Policy 2024, agreements signed under the former remain valid. The 2024 policy offers an option for projects allocated/sanctioned under the previous policy to migrate to the new policy, if they choose.
- According to the Electricity Act 2003, only the Central Government can issue guidelines for competitive bidding, not the State Government. In the absence of Central Government guidelines, Section 62 was the only legal route available to the State Government, consistent with the REC Regulations of 2017. Therefore, the draft PPA approved by the Commission for APPC tariff projects under APERC RPPO Regulations 2017 was used.
- The developer faced hardships due to policy changes over the past seven years, even though the project was conceived in 2019 and the PPA signed in 2022, and should not suffer further due to State Government delays.
- Competitive bidding doesn't always result in lower tariffs. The current PPAs executed under the APPC tariff are comparable to the tariffs discovered in the FDRE bids.
- The State Government's policy directive under Section 108 does not interfere with the Commission's regulatory role. The State Government is entitled to issue such directives to guide the Commission, and the directive in question doesn't favour the developer but reflects the State Government's intent. The State is within its rights to issue policy

directions under this Section. The directions under Section 108, as in this case promoting renewable energy generation, are in furtherance of the State's policy and should not be considered as interfering with the Commission's functions. The Government has the responsibility to address climate change and harness renewable energy sources, given Andhra Pradesh's significant potential. Furthermore, Section 86 (1) (e) of the Electricity Act, 2003 requires the State Commissions to promote cogeneration from renewable sources.

- The projects in the PPAs are meant to deliver power in two years, and the RPO Obligation would have increased by then. Therefore, it is not correct to state that RPPO has already exceeded as of the date.
- The RPP obligations fixed by the Commission in the Orders have achieved finality, and the objectors cannot challenge the same in the current proceedings. The RPP Obligations fixed by the Commission are the minimum obligations for distribution companies. The MoP has clarified that there is no bar on procuring more renewable power.
- The judgment of the Karnataka High Court and the consent of the existing PPAs are not related.
- Approved capacities under the State Electricity Plan should not influence the decision on these PPAs.
- The response from APTRANSCO states that the facility for banking excess power will not be available to the developer. Consequently, the issue of banking excess generation and the associated costs of backing down thermal power do not arise. Since banking of excess power is no longer available for these projects, storing excess generation is not necessary. Therefore, the developer would be responsible for any additional expenses for storing excess energy.
- The projects under consideration are wind-solar hybrid projects that will incorporate suitable energy storage technologies. Therefore, they are different from standard wind-solar hybrid projects. As a result, the

proposed APPC tariff for these pilot projects should be compared to tariffs from FDRE bids conducted by central government agencies. These projects, combined with appropriate energy storage technologies, will be capable of addressing concerns related to the balancing and intermittency of the plants.

- These projects, in their current configuration, will achieve a higher CUF of 60%, aligning them with FDRE bids. The FDRE projects would have an additional impact of Rs. 0.95 - Rs. 1.28 per kWh due to ISTS charges, which need to be added to their discovered tariff. REIA-led bids allow for a trading margin of Rs. 0.07 per kWh. When these charges are added, the tariff discovered in the FDRE bids becomes equal to or higher than the APPC tariff. In contrast, the proposed projects will connect to the state grid, which is an advantage for the State and consumers. Moreover, the penalty for CUF shortfall in the pilot projects is very strict.
- The Supreme Court directed APDISCOMs to honour the MOU route in the HNPCL matter. Therefore, the objectors' views on the MOU route are unfounded.
- The PPAs between Developers and DISCOMs are regulated by the Commission. The present proceeding is for the consent of the PPA. The objectors' claim that the only valid means of power procurement is through competitive bidding is untrue, according to the Electricity Act 2003 and the law. The objectors need to understand that the state's power demand is not tied to the government's plans for developing renewable power projects. There is no law that forces APDISCOMs or the GoAP to procure renewable power only through competitive bidding.
- There is no restriction on what kind of renewable projects can use the APPC tariff. The projects' tariff is equivalent to competitive bids for FDRE projects, and this tariff will remain fixed. Clause 10.2 of the RPPO Regulation,2022 allows the Commission to adopt a procedure at

variance with the regulations under special circumstances.

- The proposed projects aim to demonstrate the technology and assess the advantages and disadvantages of its daily operation over time. The findings of these pilot projects are expected to guide the future establishment of Wind Solar Hybrid projects, with or without storage, in the state. These pilot projects constitute 1.6% of the state's total installed capacity of 24,373 MW. Reducing the pilot project capacity could compromise the effectiveness of the study. Therefore, it is not advisable to reduce the pilot project's capacity.
- APDISCOMs' load is expected to increase to 19.70 GW by FY 2028-29. Peak demand is expected to increase to 18957 MW by FY 2028-29. The current installed generation capacity is 24373 MW. RPPO obligations will be 24% by FY 2026-27 (APERC) and 29.91% (FY 2024-25) to 43.33% (FY 2029-30) (MoP, GOI). To meet the MOP RPPO, APDISCOMs need to add 2.66 GW of Wind, 11.46 GW of Solar, and 1.47 GW of Hydel power by FY 2029-30. These projects will meet 1.5% of RPPO.
- Wind and Solar power have "must-run" status but are infirm due to variations in generation based on climatic conditions. This causes frequent switching of conventional generators, reducing their lifespan and incurring fixed charges due to backdown. This issue is a major concern for grid stability. To address these issues, Wind Solar hybridisation has evolved to reduce variations and bring the infirm nature of renewables to a firmer state. Hybrid projects with storage systems can further reduce variations.
- The CUF assured for the proposed projects is 60% compared to 40% for FDRE projects. AEVIPL will install battery storage at their own cost to supply firm power for two hours during morning and evening peak hours. 90% of contracted capacity supply is guaranteed for 2 peak hours (morning and evening) with a 1.5 times tariff rate penalty for shortfall.

- AEVIPL accepted the APPC rate of FY 2021-22 (Rs. 4.60 per unit) fixed for 25 years for the RTC supply. APDISCOMs are at present purchasing peak-hour energy at much higher rates than Rs. 4.60 per unit to meet the shortfall. AEVIPL agreed to share 50% RE certificates with APSPDCL, even though not required under RPPO Regulation No. 5 of 2022.
- The PPAs were amended to adopt the new 2022 Regulations, making the objectors' submissions regarding the 2017 Regulations irrelevant.
- The State will benefit by way of Capital expenditure, employment, and tax revenues.
- APSPDCL requests the Commission to allow the petition and grant consent for the PPAs, considering the larger benefits of the projects and the concern for climate change challenges.

Reply of AEVIPL:

- The objections against the PPAs are unsubstantiated allegations, lacking factual or record-based evidence. The Objectors haven't provided any valid reasons to reject the PPAs. The PPAs followed due process, underwent scrutiny, and were supported by a prior government commitment to the High Court of Andhra Pradesh. The PPAs were executed on 24.11.2022, following government directives under Section 108 of the Electricity Act, 2003.
- The GoAP directed the filing of the PPAs under Section 108 of the Electricity Act, 2003 for the approval of the Commission. The GoAP issued the directions in the interest of the State's requirements and investment. Legal litigations related to other power projects are irrelevant to the current context. The rationale for issuing directions under Section 108 of the Electricity Act, 2003, has been clearly explained by the GoAP in its communication dated 24.09.2024. These directions do not seek to interfere with or challenge the Commission's authority to determine the tariff. The GoAP has not prescribed or

mandated any specific tariff for this project, as has been erroneously contended by the objectors.

- Although conceptualised in 2018, the 400 MW BBB project has technical requirements identical to the latest trend in RE projects, FDRE projects. This project is more advanced than a plain wind-solar hybrid project. Unlike the 400 MW BBB project, plain wind-solar hybrid projects don't have to meet specific requirements like balancing loads with BESS and are only required to deliver a specific CUF as per bid conditions.
- As per APERC Regulation 5 of 2022, there's an obligation on the DISCOMs to achieve 18% RPOO in FY 2022-23. This target increases to 24% by FY 2026-27. To meet the 24% target by 2027, additional renewable energy projects are necessary.
- The proposed projects will contribute 1.5% towards achieving the state's RPO targets. The MoP Order dated 20.10.2023 has set significantly higher RPO targets till FY 2029-30, effective from 01.04.2024, compared to APERC Regulation 5 of 2022. States are expected to align with these higher targets to support India's net-zero commitment by 2070.
- The MoP has revised the RPO framework, moving from a Solar/Non-Solar categorisation to promoting Wind and Hydro development, alongside other renewable sources. This aims to boost technologies with high CUFs and grid flexibility. The new trajectory mandates states to meet a minimum of 43.3% of their power demand from renewables by 2030, with specific targets for each source. A NITI Aayog report from February 2024 estimates that Andhra Pradesh needs to add 2.66 GW of wind, 11.46 GW of solar, and 1.47 GW of hydro capacity to meet its RPO targets, calculated using the 20th Electric Power Survey of India Report of CEA.
- Unlike wind and solar projects, hydro projects have longer

commissioning timelines due to environmental and engineering challenges. Hybrid projects, especially those with energy storage and higher CUFs, are crucial for ensuring continuous power availability and reducing the burden of balancing loads on DISCOMs. Andhra Pradesh currently lacks wind-solar hybrid projects that meet DISCOMs' CUF criteria, making the proposed project essential.

- While the Objectors suggest competitive bidding should be adopted, they also claim the system suffers from defects and inherent flaws based on unsubstantiated apprehensions.
- As for the 25-year PPA tenure, guidelines on 'Tariff Based Competitive Bidding Process for Procurement of RTC power from the Grid Connected RE Projects' allow PPA tenure up to 35 years, as longer tenures result in lower tariffs.
- AEVIPL has taken the responsibility of balancing the energy with BESS, given APTRANSCO's inability, though the original PPA did not provide for the same.
- The objectors' comparison of the proposed projects with energy storage to standalone solar and wind projects is flawed, as their technical specifications align with FDRE projects. FDRE projects have higher tariffs (Rs. 4.64–4.89 per kWh), excluding additional costs like ISTS charges and REIA trading margins, making the proposed project's tariff more cost-effective for DISCOMs compared to FDRE tariffs set under Section 63 of the Electricity Act. Since FDRE projects are new and none are operational, the objectors' suggestion to study them is impractical.
- The project is connected to the State Transmission network, saving DISCOMs ISTS charges compared to procuring power from REIAs' FDRE projects, which would incur ISTS charges and a Rs.0.07 per unit trading margin.
- The project offers a CUF of over 60%, higher than the 40% minimum for typical FDRE projects, apart from 2 hours of peak hour supply

during morning and evening peaks, utilising Wind, Solar, and Energy Storage.

- The penalty mechanism for not meeting CUF requirements is more stringent. A minimum of 90% supply during peak hours is guaranteed, with a penalty of 1.5 times the PPA tariff for failure.
- The project was originally eligible for the APPC tariff at the time of commissioning (expected in 18-24 months), which is higher than the tariff of Rs 4.60 per unit agreed to by AEVIPL in the interest of all stakeholders.
- AEVIPL is developing the transmission infrastructure and switching station at its own cost, benefiting APTRANSCO.
- The project offers socio-economic benefits, including employment and State GST revenues.
- The project can revitalise the state's renewable energy sector and help in bringing significant Foreign Direct Investment, given the State's huge RE potential.
- AEVIPL has already invested significantly in the project, and pre-implementation activities are underway.
- APERC is requested to allow the petition and grant consent for the PPAs.

8. <u>Sri M. Thimma Reddy/People's Monitoring Group on Electricity Regulation</u>

- The MOU route used for procurement violates the National Tariff Policy of 2006, its 2010 amendment, the APERC's 2006 Guidelines, and Regulation 10 of 2013, which mandate competitive bidding. While GoAP's Wind Solar Hybrid Policy of 2018 also provided for competitive bidding, it was not chosen.
- APSPDCL justified the MOU route as a "new" and "innovative concept", citing no established competitive bidding guidelines. The petition acknowledges that power from similar FDRE projects was procured