



**NATIONAL SOLAR ENERGY FEDERATION OF INDIA**  
Regd. No. 362 / IV of 8 May, 2013

**भारतीय सौर ऊर्जा महासंघ**  
पंजीकरण नं 362 / IV - 8 मई, 2013

Ref no: NSEFI/CERC/2024-25/0029(R)  
Date: 09.11.2024

To,

**The Secretary,**  
**Central Electricity Regulatory Commission (CERC),**  
7th Floor, Tower B, World Trade Centre,  
Nauroji Nagar, New Delhi- 110029

**Subject: Submission of revised Comments on 'Draft Central Electricity Regulatory Commission (Deviation Settlement Mechanism and Related Matters) (First Amendment) Regulations, 2024'**

Ref: NSEFI Letter NSEFI/CERC/2024-25/0029 Dated 30.10.2024

Respected Sir,

**Greetings from National Solar Energy Federation of India!**

This is with reference to CERC's invitation of the comments **on the Draft Central Electricity Regulatory Commission (Deviation Settlement Mechanism and Related Matters) (First Amendment) Regulations, 2024**. A letter (NSEFI/CERC/2024-25/0029) had been sent in this regard on **30<sup>th</sup> October 2024** to the Honourable Commission. **Subsequently, a Public Hearing on the matter was held on November 4th at 2:30 p.m during which we were represented by our lawyer for the oral submission.**

We would like to bring to the kind attention of the Honourable Commission that certain facts pertaining to Regulation 3.1(j) that were made during the oral submission on 4<sup>th</sup> November were missed out in our original letter (NSEFI/CERC/2024-25/0029; dated: 30<sup>th</sup> October) that was submitted on 30<sup>th</sup> October over email.

We sincerely apologise for the error and request the Honourable Commission to admit the current submissions on Regulation 3.1(j) mentioned in this letter (NSEFI/CERC/2024-25/0029(R)).

Kindly review the rationale submitted along with a detailed **Annexure** enclosed at the end. The comments have been tabulated below.

Proposed amendment by CERC	NSEFI's Suggestion	Justification on Suggestion
<b>Regulation 8(8):</b>  The charges for injection of infirm power shall be zero:  Provided that if infirm power is scheduled after a trial run as specified in the Grid Code, the charges for deviation over the scheduled infirm power shall be as applicable for a general seller or WS seller, as the case may be:	<b>Regulation 8(8):</b>  The charges for injection of infirm power shall be zero:  Provided that if infirm power is scheduled after a trial run as specified in the Grid Code, the charges for deviation over the scheduled infirm power shall be as applicable for a general seller or WS seller, as the case may be:	The IEGC Regulation stipulates injection of infirm power up to 45 days in the case of RE Generators. To align IEGC and DSM Regulations, scheduling of infirm power before demonstration of firm capacity to be allowed only up to 45 days. By the end of such 45 days, the RE generators shall be obligated to establish firm capacity along with communications and metering systems.  For completing the various test requirements to demonstrate the

<p>Provided further that when the system frequency, <math>f &gt; 50.05\text{Hz}</math>, the charges for deviation of scheduled infirm power by way of over injection by a general seller or WS seller, as the case may be, shall be zero.</p>	<p>Provided further that when the system frequency, <math>f &gt; 50.05\text{Hz}</math>, the charges for deviation of</p>	<p>compliance parameters as per CEA standards, it is highlighted that there are various technical and practical difficulties as elaborated below:</p> <ul style="list-style-type: none"> <li>• Most of the REGS plants are charged and commissioned in parts/phases (in small packages of 50 MW or lower capacity) which in turn takes time in completion of trial run w.r.t. complete project capacity.</li> <li>• Further, charging of individual elements of REGS/ESS such as 220 KV line, 220 KV Bay, 33/220 KV transformers, 33 KV feeders, WTG and 33 KV unit Transformers etc. takes place in phases. In such cases, it usually takes 4-5 attempts in completion of charging of merely 100 MW project as such feeders are charged one by one progressively. And in case of large-scale projects, it would certainly need some extra time for charging and synchronization alone.</li> <li>• Even after charging such part capacity, various checks of parameters are required to be done internally which takes more time in corroborating the desired results which is quite essential to avoid any issue during the trial run.</li> <li>• During monsoon season, testing is not possible at required rated capacity, due to rapid change in radiation and wind speed. Similarly, during lean wind season, generation from wind also faces constraints</li> <li>• During the testing, due to sudden movement of cloud or drop in wind speed, any small deviation in the generation and PPC performance (Active Power, Reactive Power, Frequency, Ramp rates) may lead to failure of Trial run testing.</li> </ul>
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		<ul style="list-style-type: none"><li>• Despite having necessary equipment's installed at site, there are practical difficulties in completing all the necessary tests as required in terms of IEGC 2023 Regulation, especially the PPC test. The PPC test requires some additional time by OEM for operating parameters configuration, logics development, software program fine tuning etc. to make it absolutely ready for the Grid operation conforming to prescribed CEA standards.</li><li>• Further as stated above, PPC test can be conducted in case of large size power plants (500 MW and above) only after commissioning of the entire capacity which 45 days for each 50 MW.</li><li>• Hence, typically completion of the PPC test requires 5 to 6 months for a large-scale power plant equivalent to 500 MW.</li><li>• From FTC to Receipt of successful trial run certificate: the charges for deviation over the scheduled infirm power shall be as applicable for a general seller or WS seller, as the case may be.</li><li>• Provided further that when the system frequency, <math>f &gt; 50.05\text{Hz}</math>, the charges for deviation of scheduled infirm power by way of over injection by a general seller or WS seller, as the case may be, shall be zero."</li><li>• After receipt of successful trial run certificate to COD: the charges for deviation over the scheduled infirm power shall be as applicable for a general seller or WS seller, as the case may be.</li></ul> <p>With respect to the grid imbalance concern, it is submitted that the IEGC 2023</p>
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		<p>Regulation already provides for certain conditions to demonstrate the firm capacity such as 4 hours of cumulative power flow during sunrise to sunset for solar and during a day for wind generators.</p> <p>Scheduling of infirm power if allowed only after demonstration of such firm capacity in our view it will address the concerns of grid India to a large extent. It will bring certainty regarding the quantum of power that will be coming into the Grid subject to certain % of deviation depending upon various other factors.</p> <p>It is further submitted that the Grid management would be better if infirm power is also scheduled, as the Grid operators will have fair idea about the injection of power into the grid. It would be useful to plan and manage the Grid better in comparison to a situation when there is no information available about the quantum of infirm power coming into the grid. Unless there are any commercial implications for the deviations, the Generator would be free to inject any amount of infirm power.</p> <p>Considering these aspects in a holistic way, it would be prudent to allow scheduling of infirm power during or before completion of trial run.</p> <p>We therefore humbly request Hon'ble CERC to continue with its approach of allowing scheduling of infirm power as per its Suo-motu order dt 06.02.2023 passed in Petition no 01/SM/2023</p>
<p><b>Regulation 3.1(j):</b></p> <p>(j) 'Contract rate' means (i) in respect of a WS seller or a MSW Seller or such other entity as applicable, whose tariff is determined or adopted or approved under Section 62 or Section 63 or Section 86(1)(b) of the Act, Rs/kWh tariff as</p>	<p><b>Regulation 3.1(j):</b></p> <p>(j) 'Contract rate' means (i) in respect of a WS seller or a MSW Seller or such other entity as applicable, whose tariff is determined or adopted or approved under Section 62 or Section 63 or Section 86(1)(b) of the Act, Rs/kWh</p>	<p>In a nutshell for captive (or third party) sale the DSM charges should be either based on the agreed transfer price (contract price) or REIA bid discovered price for relevant month when RE Developer partly or fully commissions capacity. Alternately, if private contracts seem arbitrary, the REIA bid discovered price for the relevant month when plant capacity is partly or fully commissioned should apply for DSM</p>

determined or adopted or approved by the Appropriate Commission; or (ii) in respect of a WS seller or a MSW Seller or such other entity as applicable, whose tariff is not determined or adopted or approved under Section 62 or Section 63 or Section 86(1)(b) of the Act, and selling power through power exchange(s), the price as discovered in the Power Exchange for the respective transaction; or (iii) in case of captive consumption of a captive generating plant based on renewable energy sources, the weighted average ACP of the Integrated-Day Ahead Market segments of all Power Exchanges for the respective time block; (iv) in case of multiple contracts or transactions including captive consumption, the weighted average of the contract rates of all such contracts or transactions, as the case may be.

tariff as determined or adopted or approved by the Appropriate Commission; or (ii) in respect of a WS seller or a MSW Seller or such other entity as applicable, whose tariff is not determined or adopted or approved under Section 62 or Section 63 or Section 86(1)(b) of the Act, and selling power through power exchange(s), the price as discovered in the Power Exchange for the respective transaction; or (iii) **in respect of a WS seller or a MSW seller or such other entity as applicable, selling power through open access to a third party or** (iv) in case of captive consumption of a captive generating plant **either of (a) higher of the average REIA price discovered in bids for the month when the renewable energy generating plant for relevant technology (solar, wind, hybrid etc) are partly or fully commissioned or the transfer price agreed between captive parties as mentioned in their transfer pricing agreement or any similar agreement, OR b) average REIA price discovered in bids for each month of relevant technology (solar, wind, hybrid etc) when the renewable energy generating plant is partly or fully commissioned. For both options a) and b) the REIA price for the month when the capacity is fully commissioned shall be the final REIA price throughout the life of the project** (v) in case of multiple contracts or transactions including captive consumption, the weighted average of the contract rates of all such

calculation. For the month when the entire capacity of the RE Developer is commissioned, the REIA bid discovered tariff should finally apply for entire life time of the project. The following advantages accrue by using this method:

- i. **Ease of Implementation:** The e-auction prices for renewable energy discovered by REIAs are properly tabulated and immediately available. They can be shared simply through email. Such prices for a month have to merely be averaged. **Furthermore, the principles of averaging out e-auction prices aligns with Ministry of Powers, Electricity (Amendment) Rules, 2022 on uniform renewable energy tariff.**
- ii. **SECI has an obligation:** - SECI, having been granted a trading license by the Central Electricity Regulatory Commission (CERC), plays a pivotal role in facilitating renewable energy transactions. As part of its regulatory obligations, SECI is required to provide detailed pricing information, including data from e-auctions, to CERC. This transparency in sharing monthly price data, segmented by technology, ensures that market participants have access to reliable and consistent pricing references. In the context of the DSM, SECI's role becomes critical, as the prices discovered through its competitive bidding processes can serve as a benchmark for



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	contracts or transactions, as the case may be	<p>determining fair DSM prices. By using SECI's price data alongside captive contract prices, it is possible to create a more equitable framework, ensuring that DSM regulations reflect true market values and protect the interests of captive renewable energy suppliers.</p> <p>iii. <b>Cost Reflective and Reasonable:</b> The e-auction prices in a highly competitive generation market are very reasonable and reflect the most optimal project cost.</p> <p>iv. <b>Private Contract Transfer Price:</b> If the option on choosing Contract Price basis REIA discover average tariff is adopted, the need to refer private contract is entirely done away with</p> <p>v. <b>Equitable &amp; fair:</b> The usage of REIA e-auction prices for DSM of captive generators is equitable and fair as they reflect underlying cost. Renewable projects have only fixed cost and hence average price of REIA e-auctions to calculate DSM throughout life of RE project is equitable and fair way of treatment.</p> <p>Detailed rationale is as per note attached as <b>Annexure-I.</b></p>
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With Best Regards,



**Subrahmanyam Pulipaka**  
Chief Executive Officer  
National Solar Energy Federation of India

ANNEXURE - I

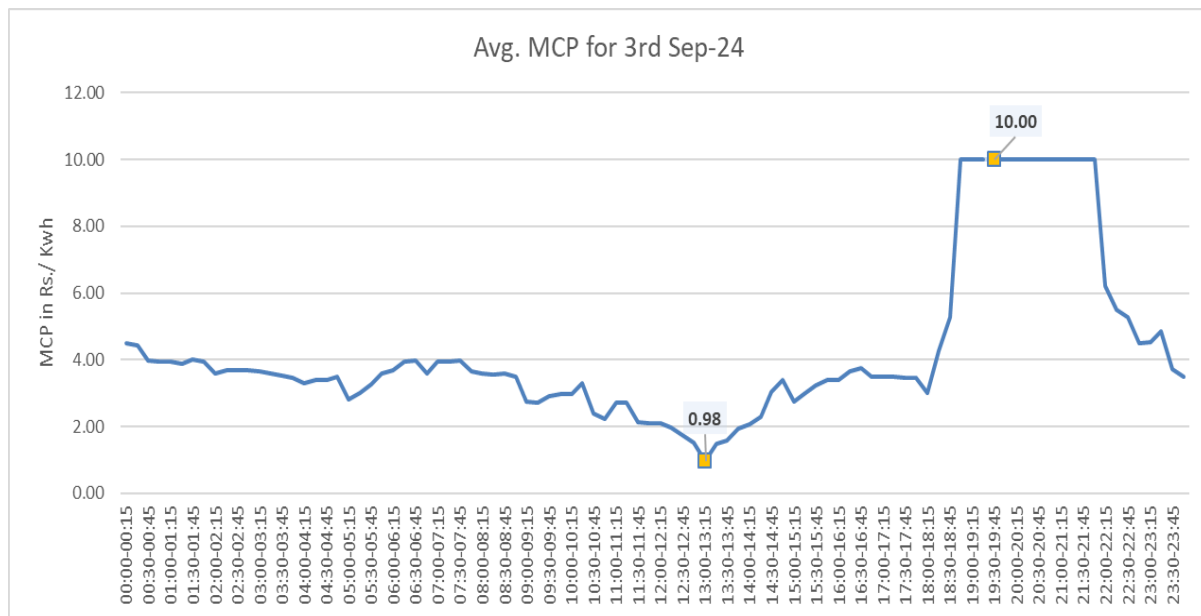
The Central Electricity Regulatory Commission's (CERC) 2024 regulations, effective from September 16, 2024, have prompted some concerns regarding the 'Contract Price' for setting deviation settlement of captive renewable energy plants. In particular, the consideration of the weighted average Area Clearance Price (ACP) of integrated day-ahead market segments for captive consumption may not fully align with the reasonable transfer prices that captive parties have worked upon.

**I. Consideration of ACP Prices and Issues faced by Renewable developer**

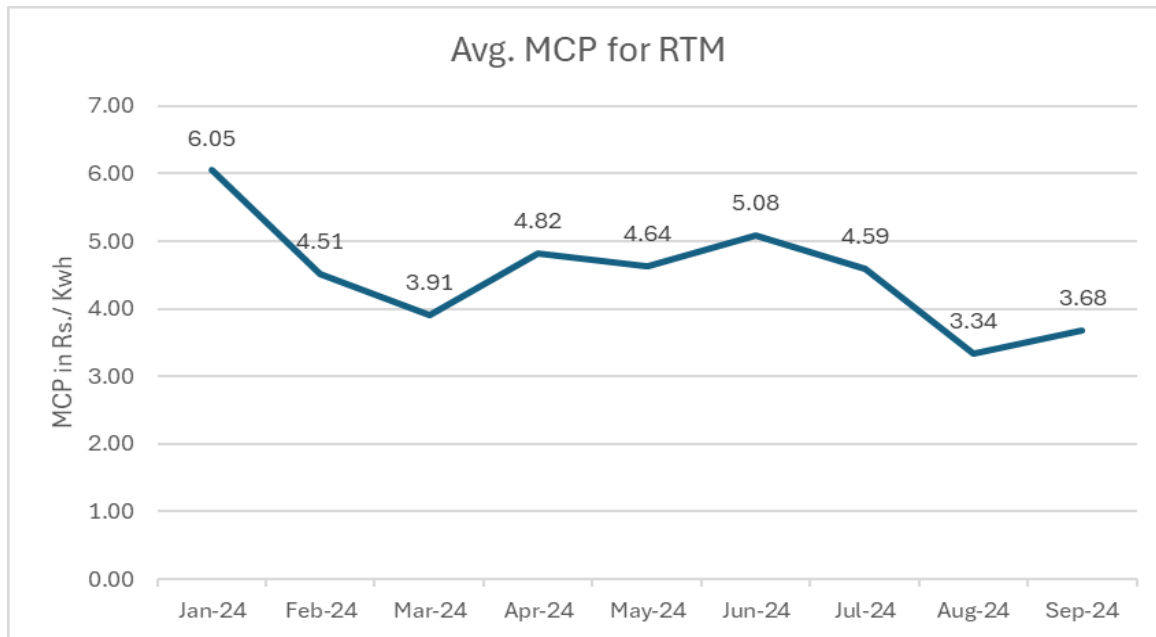
**The Area Clearance Price (ACP) in the integrated day-ahead market is inherently variable, continuously fluctuating based on market conditions.** As a result, the Deviation Settlement Mechanism (DSM) becomes highly unpredictable, making it difficult for captive renewable energy producers to forecast or hedge against these fluctuations.

This unpredictability in ACP makes it challenging to align with pre-agreed transfer price which are reasonable and represent fare cost of energy production. **Consequently, captive generators may face significant financial risks and potential losses, as the actual settlement prices under DSM could diverge sharply from their expected compensation received by captive generator on transfer price.**

Without a reliable method to predict or hedge against DSM variability, these captive generators could experience substantial DSM penalties, impacting the economic viability of their operations. A price graph illustrating the fluctuations in ACP over one day as well as during the year 2023 highlights its volatility and emphasize the difficulty in managing financial impact under the current DSM framework.



Here is a graph showing the fluctuations in Area Clearance Price (ACP) over a single day, divided into 15-minute time intervals. The variability in ACP prices across the day further emphasizes the challenges in predicting and managing settlement costs under the Deviation Settlement Mechanism (DSM).



Here is a graph showing the fluctuations in Area Clearance Price (ACP) over a period of Jan-24 till Sept-24.

## **II. Captive Renewable Energy: Balancing ACP Fluctuations and DSM Risks for C&I**

Captive power supply is becoming a critical component in the decarbonization efforts of the Commercial and Industrial (C&I) sectors. With the increasing focus on sustainability and reducing carbon footprints, many C&I entities are transitioning to renewable energy (RE) sources, such as solar and wind, through captive generation setups. Captive plants enable businesses to secure a reliable energy supply while also meeting their environmental goals.

In this context, nearly 30 GW of contracts have already been executed across the country, showcasing the growing demand for renewable energy in the C&I sectors. However, to ensure round-the-clock (RTC) energy supply that meets the operational needs of these industries, an estimated 80 GW of renewable energy capacity needs to be installed. This is because renewable energy sources are inherently intermittent, and a higher installed capacity is necessary to balance fluctuations and ensure a continuous power supply.

The consideration of ACP prices for deviation settlement mechanism (DSM) is unfair, as transfer price under captive scheme are clearly mentioned in Power Delivery Agreement with captive users. Captive generation projects provide power to captive user(s) on long term, are viable on the reasonable transfer price for delivery of captive energy to captive user(s) and hence obtain financial closure from banks including public sector banks like PFC, REC etc. By not recognizing the transfer price, a discrepancy is created which is hindering the growth of renewable energy sources and decarbonisation initiative of hard to abate industries.

## **III. Considering Alignment of Captive Transfer Price Rates with Competitive Bidding Prices**

The prices discovered for captive renewable energy (RE) generation are based on the underlying costs of the renewable asset, are reasonable and aligned with competitively discovered rates by Renewable Energy Implementing Agencies (REIA) in auctions. **For instance, hybrid Power Purchase Agreements (PPAs) for captive generation plants have been entered into a transfer prices of ₹3.60/kwh and ₹3.18/kWh.** These rates are around the market ballpark of competitive bidding prices for hybrid energy, reflecting the fair pricing structure for similar hybrid resources.





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To further support this, we can look at the competitive bidding results from prominent agencies like SECI, NTPC, and NHPC, which regularly hold tenders for various renewable technologies like FDRE, stand along solar, wind etc. **The prices discovered through these tenders, as seen in recent bidding results, are similar to those calculated by captive generating plants.** This highlights that the transfer pricing for captive PPAs is not arbitrary and aligns with prices of comparable resources.

**Given these considerations, it is reasonable to argue that the transfer price between captive parties should be accepted, particularly when they are around the rates discovered through competitive bidding for the same technology. With REIAs already having access to e-auction bid prices for different technologies auctioned every month, the pricing data is readily available to validate that transfer price under captive scheme. Few SECI E-auction results on different technologies are attached herewith for your ready reference as Annexure-A.**

#### **IV. Rationalizing Pricing Mechanisms to Support Captive Renewable Energy Generators**

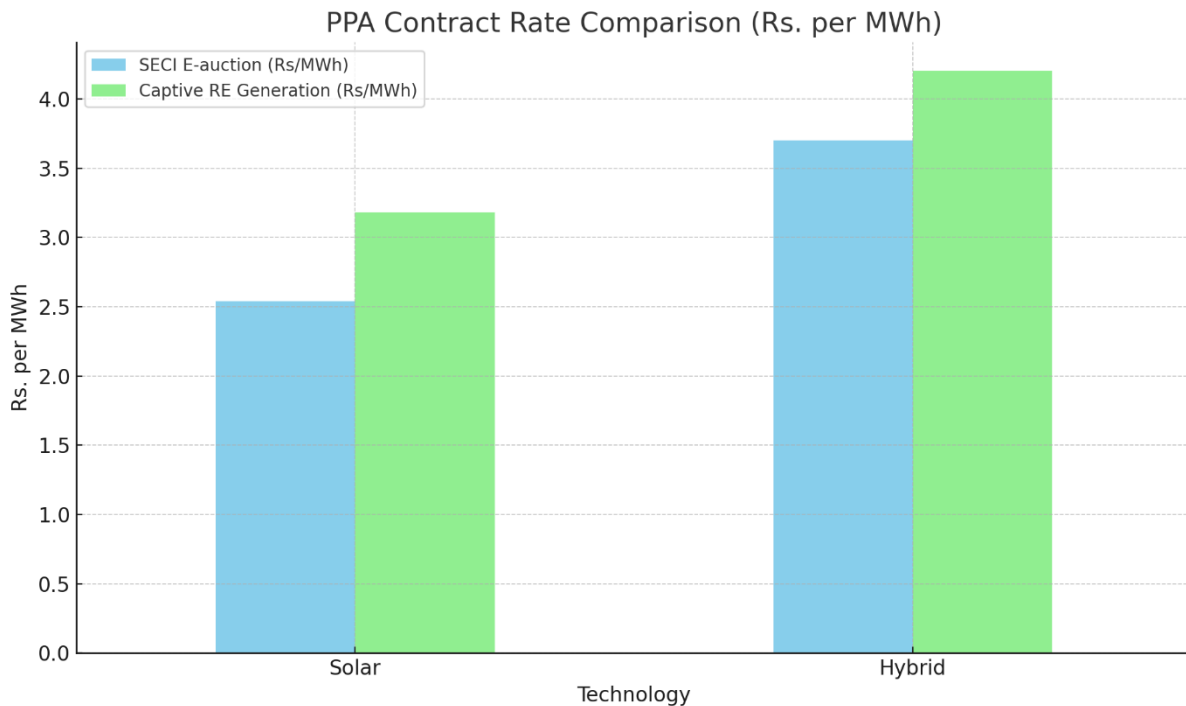
Rationalization of the pricing mechanisms is essential to address the increasing demand for captive renewable energy and to ensure fairness for energy suppliers. As the C&I sector continues to adopt renewable energy solutions through captive generation, aligning transfer pricing with competitive bidding discovered market rates seems important. This alignment not only supports the financial sustainability of captive energy suppliers but also encourages further investments in renewable infrastructure. **By considering the rates established in REIA competitive bidding, regulatory bodies can create a more equitable framework that reflects the market value of energy. This will help mitigate the unpredictability associated with the current Deviation Settlement Mechanism (DSM) and Area Clearance Price (ACP) fluctuations, fostering a more stable environment for all stakeholders involved in the renewable energy landscape.**

#### **V. Proposed Recommendations for Contract Pricing under DSM Regulations**

Addressing the challenges posed by fluctuating Area Clearance Prices (ACP) and the Deviation Settlement Mechanism (DSM) is essential for supporting the growth of captive renewable energy suppliers in the C&I sector. To achieve this, we propose the following suggestions:

**a. Contract Price for Captive Generators:** The Contract Price definition in CERC DSM Regulations, 2024 may be amended to consider Contract Price for captive generators either as **i) higher of the average REIA price or the transfer price calculated between captive parties for similar technology (solar, wind, hybrid etc) and mentioned in their transfer pricing agreement or ii) average REIA price discovered each month for relevant technology**

**b. Monthly Price Provision by SECI/REIAs:** REIAs like SECI, NTPC, NHPC etc can provide the relevant pricing information for each e-auction on a monthly basis, broken down by technology. Sample Illustration is as under.



**c. Simple Average Calculation:** A simple average of these prices for each month should be considered for relevant technology (solar, wind, hybrid etc).

**d. Final Contract Price Determination for DSM:** The final contract price for DSM calculation on a renewable energy project for its lifetime should be the contract price as per c and a above applicable for the month when the last MW of the project declares COD *e.g. for a 200 MW solar project if the last 40 MW declares COD in October (remaining 160 MW has already declared COD), the simple average price for that month should apply to calculate DSM for entire 200 MW throughout the life of the project.* Till such time when only part capacity is being commissioned, the contract price as per c and a above applicable for the month when the part capacity is commissioned should be used for DSM calculation *eg in the above example if 80 MW got commissioned in March then simple average price for that month should apply to calculate DSM and if next 80 MW gets commissioned in May then simple average of the month of May should apply on entire 160 MW.*

The **Advantages** of the above proposal are as follows:

- i. **Ease of Implementation:** The e-auction prices for renewable energy discovered by REIAs are properly tabulated and immediately available. They can be shared simply through email. Such prices for a month have to merely be averaged. **Furthermore, the principles of averaging out e-auction prices aligns with Ministry of Powers, Electricity (Amendment) Rules, 2022 on uniform renewable energy tariff.**
- ii. **SECI has an obligation:** - SECI, having been granted a trading license by the Central Electricity Regulatory Commission (CERC), plays a pivotal role in facilitating renewable energy transactions. As part of its regulatory obligations, SECI is required to provide detailed pricing information, including data from e-auctions, to CERC. This transparency in sharing monthly price data, segmented by technology, ensures that market participants have access to reliable and consistent



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pricing references. In the context of the DSM, SECI's role becomes critical, as the prices discovered through its competitive bidding processes can serve as a benchmark for determining fair DSM prices. By using SECI's price data alongside captive contract prices, it is possible to create a more equitable framework, ensuring that DSM regulations reflect true market values and protect the interests of captive renewable energy suppliers.

- iii. **Cost Reflective and Reasonable:** The e-auction prices in a highly competitive generation market are very reasonable and reflect the most optimal project cost.
- iv. **Private Contract Transfer Price:** If the option on choosing Contract Price basis REIA discover average tariff is adopted, the need to refer private contract is entirely done away with
- v. **Equitable & fair:** The usage of REIA e-auction prices for DSM of captive generators is equitable and fair as they reflect underlying cost. Renewable projects have only fixed cost and hence average price of REIA e-auctions to calculate DSM throughout life of RE project is equitable and fair way of treatment.

Implementing these measures will help create a more equitable and predictable pricing environment, ultimately promoting the continued investment in and growth of renewable energy solutions within the captive power framework.