TAMIL NADU ELECTRICITY REGULATORY COMMISSION

Order of the Commission dated this the 13th Day of August 2024

PRESENT:

Thiru M.Chandrasekar .... Chairman

Thiru K.Venkatesan .... Member

and

Thiru B.Mohan .... Member (Legal)

D.R.P. No.12 of 2023
&
D.R.P.No.13 of 2023

Narbheram Solar TN Pvt. Ltd.
Represented by its authorized signatory
Avani Signature, 6th Floor,
91A/1, Park Street, Kolkata – 700 016.

... Petitioner
(Thiru.Rahul Balaji
Advocate for the Petitioner)

Versus

1. Tamil Nadu Generation and Distribution
   Corporation Ltd, (TANGEDCO),
   Represented by its Chairman & Managing Director,
   10th Floor, 144, Anna Salai,
   Chennai – 600 002.

2. The Chief Engineer,
   NCES, TANGEDCO
   No.144, Anna Salai,
   Chennai – 600 002.

3. State Load Despatch Centre
TANTRANSCO
No.144, Anna Salai,
Chennai – 600 002.

... Respondent
(Tvl.N.Kumanan & A.P.Venkatachalapathy
Standing Counsels for TANGEDCO &
TANTRANSCO/SLDC)

D.R.P.No.13 of 2023

NVR Energy Private Limited,
Represented by its authorized signatory
Avani Signature, 6th Floor,
91A/1, Park Street, Kolkata – 700 016.

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TANTRANSCO/SLDC)

COMMON ORDER

Prayer in D.R.P.No.12 of 2023

This Dispute Resolution Petition stands preferred by the Petitioner M/s.Narbheram Solar TN Private Limited., with a prayer to-

a. Exercise Regulatory power and review the working and applicability of Clause 6 of the Power Purchase Agreement ("PPA") with 1st Respondent TANGEDCO dated 26.09.2017 with regard to the Capacity Utilisation Factor and working of such provision, in the context of the conditions prevailing in the State of Tamilnadu and issue appropriate directives, including revising the CUF band to 12%-19% to cover variations that are due to irradiation and other factors which are beyond the control of the Petitioner as detailed above and issue further directions with regard to same in order that appropriate CUF band be fixed by the Commission for the period of the PPA between the parties;

b. restrain the Respondents from issuing backing down/curtailment for any reason other than grid safety and security issues and without recording proper reason and enforce "must-run" status of the Petitioner's solar power plant;

c. Direct the respondents to refund an amount of Rs.13,51,82,821/- (Rupees Thirteen Crore Fifty One Lakh Eighty Two Thousand Eight Hundred Twenty One Only) deducted towards CUF penalty for the FY 2019-2020 and 2020-2021;

d. Award costs of the instant petition including court fees and legal expenses and make payment of the said sum to the petitioner in compliance with the provisions of Regulation 33 of the Commission- Conduct of Business Regulations, 2004.; and

e. pass such further or other orders as the Commission may deem fit in the facts and circumstances of the case and thus render justice.

Prayer in D.R.P.No.13 of 2023

a. Exercise Regulatory power and review the working and applicability of Clause 6 of the Power Purchase Agreement ("PPA") with 1st Respondent TANGEDCO dated 26.09.2017 with regard to the Capacity Utilisation Factor and working of such provision, in the context of the conditions prevailing in the State of Tamilnadu and issue appropriate directives, including revising the CUF band to 12%-19% to cover variations that are due to irradiation and other factors which are beyond the control of the Petitioner as detailed above and issue further directions with regard to same in order that appropriate CUF band be fixed by the Commission for the period of the PPA between the parties;

b. restrain the Respondents from issuing backing down/curtailment for any reason other than grid safety and security issues and without recording proper reason and enforce "must-run" status of the Petitioner's solar power plant;

c. Direct the respondents to refund an amount of Rs.11,53,11,360/- (Rupees Eleven Crore Fifty Three Lakh Eleven Thousand Three Hundred Sixty Only) deducted towards CUF penalty for the FY 2019-2020 and 2020-2021;

d. Award costs of the instant petition including court fees and legal expenses and make payment of the said sum to the petitioner in compliance with the provisions of Regulation 33 of the Commission- Conduct of Business Regulations, 2004.; and

e. pass such further or other orders as the Commission may deem fit in the facts and circumstances of the case and thus render justice.

The above two petitions having come up for final hearing on 09.07.2024 in the presence of Thiru.Rahul Balaji, Advocate for the Petitioner and Tvl. N.Kumanan and A.P.Venkatachalapathy, Standing Counsel for the Respondents upon hearing the arguments on both sides and on perusal of relevant material records and the matter having stood over for consideration till this date this Commission passes the following

1. Contentions of the Petitioner in D.R.P.No.12 of 2023 :-

1.1. The Petitioner is engaged in the business of generation of renewable energy and has been operating a 100 MW solar power project located at Tuticorin District, in the State of Tamil Nadu. The details of the solar power project of the Petitioner in the State of Tamil Nadu are as under:

Project Location	Capacity	Date of Commissioning
Village – Govindapuram and Maruthanvalvu Naraikinaru, Tehsil – Ottapidaram, Villages Therkumailodai & Kalappaipatti, Tehsil – Kayathar, District – Tuticorin	100 MW	24.09.2019

1.2. The present petition is being filed seeking appropriate Regulatory review and issuance of consequential directions concerning the operation of the Solar PPA which has been rendered impossible of adherence due to the CUF stipulation contained therein and consequently to issue further directions within the Regulatory domain with regard to the Power Purchase Agreement dated 26.09.2017 including amendments thereto entered into with the Respondent TANGEDCO.

1.3. There have been substantial delays even in settling Invoice dues that are admitted. By inordinately delaying such payments the Respondents have pushed the petitioner to financial distress by not only withholding payments under PPA but also not paying interest for the belated payments which is an automatic consequence of delayed payment. Further, unjustified backing down instructions issued by the 3rd Respondent SLDC without a mechanism to monitor backing down/curtailment instructions and recording proper reason leading to loss of generation is required to be compensated. The "Must-Run" status of the Petitioner's solar power plant needs to be enforced, as it is guaranteed under the applicable Code and regulations as well as have been consistently

reiterated by the Commission and further for of the reasons that are morefully set out in this petition.

1.4. The standard methodology now being employed by the Respondent is to delay payment of Invoices to renewable Energy generators and then force them to give rebates against Invoices as a pre-condition to release payments and also seek for express undertakings seeking waiver of interest claims or agreeing for 50% rebate on interest. One such undertaking which the Petitioner was compelled to submit with TANGEDCO for release of payment, is being filed herewith. Such demand and procurement of undertakings strikes at the very root of a power purchase agreement and demonstrates the arbitrary use of power being exercised by one party to a contract. Such actions are contrary to the express regulatory scheme and contrary to the binding judgment of the Hon'ble Supreme Court where TANGEDCO was also a party. The Hon'ble Supreme Court has held that obtaining rebates against payments were contrary to express terms of the EPA and are impermissible. It has therefore become necessary to approach this Commission to seek payments that have become due on an urgent basis

and to seek enforcement of such payments.

1.5. There has been an impetus, both in India and abroad to promote generation of electricity from non-conventional/renewable energy sources and to increase the share of electricity from renewable sources and to gradually bring down reliance on conventional sources of energy for production of electricity. This impetus was reflected in the

consensus reached between the nations of the world and was accepted as a binding standard to be achieved by the members countries and enshrined in the Protocol to the United Nations Framework Convention on Climate Change, adopted in Kyoto, Japan on 11th December, 1997 (‘Kyoto Protocol'). The Protocol was aimed at addressing the need to promote the use of renewable sources of energy as a measure to reduce the emission of greenhouse gases. India acceded to the Protocol on 22nd August, 2002. Specific reference in this regard may be had to Article 2 Clause 1 of the Kyoto Protocol which reads as follows:

"1. Each Party included in Annex I, in achieving its quantified emission limitation and reduction commitments under Article 3, in order to promote sustainable development, shall:

(a) Implement and/or further elaborate policies and measures in accordance with its national Circumstances, such as:

…

(iv) Research on, and promotion. development and increase use of, new and renewable forms of energy (Emphasis Supplied),of carbon dioxide sequestration technologies and of advanced and innovative environmentally sound technologies;

1.6. The Electricity Act, 2003, was enacted with a view to consolidate the different aspects of electricity generation and supply which were earlier governed by distinct legislations; and to streamline the entire process of generation and supply of electricity and pertinently, to encourage private sector participation in generation, transmission and distribution with a view to alleviating power production situation in the country. Incidentally, the Electricity Act, 2003 also takes into account the obligation on the State to encourage utilization of renewable sources for generation of power and has cast an

obligation upon the Regulatory Commissions under the Act to encourage and initiate measures for production of electricity from conventional sources. Section 3 of the Act casts an obligation on the Central Government to prepare a National Electricity Policy in consultation with the State Governments for development of power system based on utilization of resources including renewable sources of energy and to prepare National Electricity Plan every five years for the implementation of the polices and milestones envisaged in the Electricity Policy.

"6.4 Non-conventional sources of energy generation including Co-generation:

(1) Pursuant to provisions of section 86(l)(e) of the Act, the Appropriate Commission shall fix a minimum percentage for purchase of energy from such sources taking into account availability of such resources in the region and its impact on retail tariffs. Such percentage for purchase of energy should be made applicable for the tariffs to be determined by the SERCs latest by April 1, 2006. It will take some time before nonconventional technologies can compete with conventional non-conventional sources in terms of cost of electricity. Therefore, procurement by distribution companies shall be done at preferential tariffs determined by the Appropriate Commission.

(2) Such procurement by Distribution Licensees for future requirements shall be done, as far as possible, through competitive bidding process under Section 63 of the Act within suppliers offering energy from same type of nonconventional non-conventional sources. In the long-term, these technologies would need to compete with other sources in terms of full costs. (3) The Central Commission should lay down guidelines within three months for pricing non-firm power, especially from non-conventional sources, to be followed in cases where such procurement is not through competitive bidding. "

It is also pertinent that the Tariff Policy has since been amended by Government of India by Resolution dated 20.1.2011 and the revised Clause 6.4 is as under:

"6.4 Non-conventional and renewable sources of energy generation including co-generation. (1) Pursuant to provisions of section 86(1)(e) of the Act, the Appropriate Commission shall fix a minimum percentage of the total consumption of electricity in the area of a Distribution Licensee for purchase of energy from such sources, taking into account availability of such resources in the region and its impact on retail tariffs. Such percentage for purchase of energy should be made applicable for the tariffs to be determined by the SERCs latest by April 1, 2006. (i) Within the percentage so made applicable, to start with, the SERCs shall also reserve a minimum percentage for purchase of solar energy from the date of notification in the Official Gazette which will go up to 0.25% by the end of 2012-13 and further up to 3% by 2022. (ii) It is desirable that purchase of energy from non-conventional sources of energy takes place more or less in the same proportion in different States. To achieve this objective in the current scenario of large availability of such resources only in certain parts of the country, an appropriate mechanism such as Renewable Energy Certificate (REC) would need to be evolved. Through such a mechanism, the renewable energy based generation companies can sell the electricity to local Distribution Licensee at the rates for conventional power and can recover the balance cost by selling certificates to other distribution companies and obligated entities enabling the latter to meet their renewable power purchase obligations. In view of the comparatively higher cost of electricity from solar energy currently, the REC mechanism should also have a solar specific REC. (iii) It will take some time before non-conventional technologies can compete with conventional sources in terms of cost of electricity. Therefore, procurement by distribution companies shall be done at preferential tariffs determined by the Appropriate Commission. "

1.7. The Government of India has approved certain amendments to the National Tariff Policy on 20 January 2016 (“NTP, 2016"). The National Tariff Policy is formulated and notified in continuation of the National Electricity Policy (NEP) which, in turn, is notified under Section 3 of the Electricity Act, 2003. NTP, 2016 is primarily focused on renewable energy, energy security and ensuring affordable tariffs. The following amendments have been introduced in relation to RPOs. Significantly, it is provided therein that RPO shall be applicable to cogeneration from sources other than renewable sources. It would be relevant to extract the powers of the SERC under the Act in this regard.

86. Functions of State Commission. - (1) The State Commission shall discharge the following functions, namely: -

(e) promote co-generation and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee

1.8. Furthermore, the National Action Plan for Climate Change (NAPCC) announced by the Hon'ble Prime Minister of India on June 30, 2008 envisages several important measures with a view to increasing the share of renewable energy in total electricity consumption in the country. NAPCC set the target of 5% renewable energy purchase for FY 2009-10 against the level of around 3.5% existing in the FY 2008-09. Further, NAPCC envisages that such target will increase by 1% for next 10 years. This would mean NAPCC envisages renewable energy to constitute approx. 15 % of the energy mix of India by the year 2019-2020. The National Electricity Policy also reiterates that by virtue of the purchase obligation vis-a-vis renewable sources of energy as envisaged in Section 86 (1) (e) of the Electricity Act, the share of electricity from non-conventional sources needs to be increased progressively as prescribed by the SERCs. In the meantime, acknowledging the existence of constraints in terms of availability of Renewable Energy sources evenly across different parts of the country, the Central Electricity Regulatory Commission has formulated the Central Electricity Regulatory Commission (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010 ("CERC (REC)

Regulations") for the development of a market in power from Non- Conventional Energy Sources by issuance of transferable and saleable credit certificates issued under and in terms of the Regulations.

1.9. Vide Notification No. TNERC/RPO/19/1 dated 07.12.2010, the Commission, in exercise of powers conferred by Section 181, read with Section 61, 66 and 86(1)(e) of the Electricity Act, 2003 notified the TNERC (Renewable Energy Purchase Obligation) Regulations, 2010 (RPO Regulations) on 07.12.2010 with a view to defining the scope of RPOs within the State of Tamil Nadu.

1.10. Therefore, it is now clear that it is incumbent upon the Respondent TANGEDCO to purchase power from renewable sources of energy including solar power generators to meet its purchase obligation under the 2010 RPO Regulations. Further, the Commission has the bounden duty to protect and promote generation of electricity from renewable sources of energy in order to be compliant with the Electricity Act, 2003 and also the various international conventions such as the UNFCC and the Kyoto Protocol.

1.11. In furtherance of the requirement to comply with Renewable Purchase Obligation (RPO), the 1st Respondent had announced solar tender through reverse auction. M/s.Narbheram Vishram, an affiliate of the petitioner was a successful bidder under Tender Specification No: CE/NCES/OT No.1/2017-18 issued by the 1st Respondent and has been awarded Letter of Intent (LOI) for setting up of 100 MW solar power project vide LOI Ref. No: CE/NCES/SE/SOLAR/EE/SCB/AEE3/F.M/s. Narbheram/D.774/17 dated 29.08.2017.

1.12. Pursuant to the issuance of LOI, the petitioner (substituted for M/s.Narbheram Vishram by virtue of the Addendum to the PPA which was executed on 15.12.2017) had executed the Power Purchase Agreement ("PPA") with 1st Respondent TANGEDCO on 26.09.2017, wherein the 1st Respondent TANGEDCO had agreed to buy power from the Petitioner at Rs.3.47 per unit for a period of 25 years from the Commercial Operation Date i.e., from 24.09.2019.

1.13. The relevant clauses of the PPA for the purposes of the present petition are extracted herein below:

"5. Tariff and Other Charges:
(a) Energy Charges:
The Solar Power Tariff of Rs.3.47 per unit finalized though reverse bidding shall be applicable to the SPG for the agreement period of 25 years i.e.25 years from the date of Commercial Operation of the solar power plant.

(b) Reactive Power Charges:
The reactive power charges shall be as specified in the Order on Open Access issued by the Commission from time to time.

(c) Start up Power Charges:
The drawal of energy by the SPG from the distribution licensee shall be adjusted against the exported energy for every billing period. In case, drawal of power is an excess over the export of power in a billing month, such excess drawal shall be billed, as per Commission's Tariff Order in force.

6. Capacity Utilisation Factor (CUF):
The capacity Utilisation Fact (CUF) shall be 17% to 19%, calculated on yearly basis. In case the availability is more than the maximum CUF specified i.e.19%, the Distribution Licensee will purchase the excess generation, at Average Pooled Purchase Cost (APPC) or the PPA tariff or the applicable preferential tariff, whichever is less. In case the availability is less than the minimum CUF specified i.e.17%, the SPG shall pay Distribution Licensee for the actual shortfall in terms of units at the prevailing forbearance price fixed by the CERC, since the Distribution Licensee is an obligated entity to utilize solar power as per the Commission's RPO Regulation.

7. Billing and Payment:

(a) The due date for payment of energy bill will be 60 days from the date of receipt (excluding the date of receipt) of bill incomplete from the generator. The Distribution Licensee shall provide unconditional revolving and irrevocable LC which shall be drawn upon the SPGs.

(b) The Distribution Licensees shall provide LC from public sector/scheduled commercial bank. The payment shall be made on 60th day from the date of receipt of passed bill (Invoice) at LC opener's bank. If the 60th day (due date) happens to be a holiday for Distribution Licensee and/or Banks, then payment will be made on the next working day. All expenses relating to LC viz. Opening Charges, Maintenance Charges, Negotiation Charges and renewal charges are to the account of SPGs. The revolving LC shall have a term of 12 months and validity of the LC shall be renewed year after year and remains valid upto expiry of the agreement and the amount shall also be renewed for an amount equal to 105% of the average of monthly billing of preceding 12 months.

(c) The Distribution Licensee wherever necessary, shall raise a bill at the end of a billing period of one month for the power drawn by the SPG in excess over the exported power and the SPG shall make payment to the Distribution Licensee at HT temporary supply tariff within the time stipulated to the HT consumers in the Commission ~ Supply Code, 2004 as amended from time to time.

16. Force Majeure:

Both the parties shall ensure compliance of the terms of this agreement. However, no party shall be liable for any claim for any loss or damage whatsoever arising out of failure to carry out the terms of this agreement to the extent that such failure is due to force majeure events as defined hereunder. Any party claiming the benefit of this clause shall satisfy the other party of the existence of such an event(s) by giving notice to the other party in writing within 15 days from the occurrence of such Force majeure.

"Force Majeure" events means any event which is beyond the control of the parties involved which they could not foresee or with a reasonable amount of diligence could not have been foreseen or which could not be prevented and which substantially affect the performance by either party such as but not limited to :-

(i) Acts of natural phenomena, including but not limited to floods, drought earthquakes, lightning and epidemics;

(ii) Acts of any Government domestic or foreign, including but not limited to war declared or undeclared, hostilities, priorities, quarantines. embargoes;
(iii) Riot or Civil Commotion; and
(iv) Grid / Distribution System's failure not attributable to parties to this agreement. "

1.14. The Date of Commissioning of petitioner's said 100MW solar power plant is 24.09.2019.

1.15. The present petition has been filed for the specific purpose of examination of the Clause pertaining to CUF and its application to the petitioner's project. It is also to be noted that the agreement between the parties itself recognises that Acts of natural phenomena will be treated as a Force Majeure. It is also pertinent to state that the Regulatory Commissions have an overarching regulatory power over licensees. The Regulatory Commissions continue to exercise continuous regulatory supervision over the parties and licensees especially over tariff. This is in order that the Preamble to the Electricity Act, 2003 which contemplates taking measures conducive to development of the power sector while protecting the interest of consumers. Further the underlying basis of the Electricity Act is to ensure adherence to commercial principles with regard to tariff.

1.16. The Petitioner's day-to-day maintenance and power generation was severely impacted due to the backdown instructions issued by the 3rd Respondent and the non-payment of invoices raised by the Petitioner and as such, the Petitioner is unable to achieve minimum CUF of 17% as per the PPA. The maximum CUF stipulated under the PPA is 19% (maximum offtake) while in case of failure to achieve minimum CUF of 17% the Solar Power Developer is subjected to the payment of penalty. The gap between the

maximum and minimum CUF is substantially lower as compared to other PPAs executed by the Petitioner's group entities and is summarized as below to demonstrate the industry standards:

S.No.	PPA Authority	State / Central	CID	CUF Max	CUF Min	Gap
1	NVVN, Rajasthan	Central	25.02.13	21.00%	12.00%	9.00%
2	MPPMCL-1	Madhya Pradesh	09.06.15	22.00%	12.00%	10.00%
3	MPPMCL-2	Madhya Pradesh	15.09.16	24.00%	12.00%	12.00%
4	TSSPDCL	Telangana	05.12.16	25.00%	12.00%	13.00%
5	MESCOM	Karnataka	11.02.17	21.00%	12.00%	9.00%
6	MPPMCL-3	Madhya Pradesh	12.07.17	24.00%	12.00%	12.00%
7	BESCOM	Karnataka	16.10.17	21.00%	12.00%	9.00%
Average				**22.57%**	**12.00%**	**10.57%**
NSTN	TANGEDCO	Tamil Nadu	24.1019	19.00%	17.00%	2.00%
NVR Energy	TANGEDCO	Tamil Nadu	24.10.19	19.00%	17.00%	2.00%

1.17. The above table would show that with regard to the CUF band prescribed in Tamil Nadu, it is in variance with the bands prescribed in other States. The Distribution Licensee ought to demonstrate the basis for fixing such a narrow band as the peculiarities of the geographical and technical parameters within the State are within its exclusive knowledge. Be that as it may, the subsequent developments would show that such narrow band cannot be applied for purposes of projects in Tamil Nadu due to several factors and therefore there is urgent regulatory requirement to delete this provision or change the band in order to bring it in compliance with the actual positron. Further such band not being in consonance with the Central Government Guidelines

which alone would stand protected by Section 63 of the Electricity Act 2003 and in respect of which no specific deviation approval was ever obtained by the Distribution Licensee, the Commission is required to examine the entire issue in exercise of its Regulatory powers.

1.18. When the plants are designed to suit such extremely narrow band of PPA, so as to neither exceed the maximum limit and not fall below the minimum limit, it is impossible to achieve the desired level of performance in case there is a slightest disruption in operation due to reasons beyond the control of a Solar Power Generator. Disruption in generation, due to the factors beyond the Petitioner's control, which are more particularly detailed in this petition, led to the loss in performance and resulted in the plant not adhering to the narrow CUF band, given the design limitations. The performance parameters of the Petitioner's plant is summarised below:

Financial Year	**SPV**	**Design CUF – P- 50**	**Design CUF-P-75**	**Design CUF-P-90**	**Actual CUF**	**Possible CUF considering Curtailment + Irradiation Loss + Heavy Monsoon & COVID restrictions**
2019-20	NSTN	18.91%	18.25%	17.64%	6.79%	7.13%
2020-21	NSTN	19.63%	18.94%	18.31%	12.84%	14.30%
2021-22	NSTN	19.49%	18.81%	18.19%	17.45%	17.86%

1.19. The significance of P-50, P-75 & P-90 design basis are as below:

a. P-50 - 50% probability of achievement - Ideal Case Scenario

b. P-75 - 75% probability of achievement - Best Effort Case Scenario

c. P-90 - 90% probability of achievement - Most Likely Case Scenario

1.20. The Gap between the maximum and minimum CUF in the PPA is substantially thin in contrast to the negative variation in irradiation, which has been much higher over the last few years. The plants have been designed to perform taking into consideration the standard and guaranteed degradation of Solar PV Modules and long term solar resources availability with minimal variations. The Petitioner has carried out a detailed analysis of the above and a summary is presented below:

a. Degradation & CUF:

The Petitioner's plants have used most reputed domestic and international makes of solar PV modules with standard degradation levels. The Petitioner's plant has, been designed to achieve the maximum CUF under the PPA i.e., 19% in the first year of operations and with the standard levels of degradation, it is not technically feasible to maintain the minimum CUF specified in the PPA i.e., 17%, over the term of the PPA i.e., 25 years. From the illustration given in the table below, it is clearly evident degradation in solar modules in terms of CUF over the term of the PPA is 2.93% which exceeds the narrow CUF band of 2% (17% to 19%) under the PPA. The summary of co-relation between the above factors are as below:

Degradation and CUF Comparison : Tamil Nadu projects	
Particulars	**(%)**
Total Degradation over Life of the Plant	**18.28%**
CUF-Y-1	19.00%
CUF-Y-5	18.00%
CUF-Y-10	17.74%
CUF-Y-15	17.16%
CUF-Y-20	16.61%
CUF-Y-25	16.07%

Drop in CUF over life of the Plant	2.93%

As per the global industry standards, the degradation level of Solar PV modules over a period of 25 years is 20%. In case of the solar PV modules used in the Petitioner's plant, the estimated degradation over a period of 25 years is 18.58% which is better than the global industry standard. Despite the same the CUF for the Petitioner's plant is bound to fall below the minimum CUF of 17% during the term of the PPA,

since the degradation in terms of CUF is more than the narrow CUF band under the PPA which shall automatically lead to penalty.

b. Solar Resource Variation

The plant is designed considering the yield/output estimation, carried out through PV syst, a globally acknowledged software and based on long term weather data for solar resources for specific locations where the projects are located. In the Petitioner's case, for the purpose of designing of the plant, the Solar GIS weather database has been used for long term irradiation data. However, the actual irradiation data has been found to be varying heavily on a month on month basis for last 31 months (actual recorded data at site compared from Sept 2019, i.e., commissioning of the projects till March 22) as well as on an annual basis. The results of the annual variations are summarized below:

Financial Year	Annual Irradiation Variation
2019-20	-3.83%
2020-21	-4.01%
2021-22	-2.05%

It is visibly noticeable that the solar irradiation has varied from - 2.05% to as high as - 4.01% on an annual basis over the last 3 years. In a recent report dated 11-04-2022 published by Solar GIS they have concluded as below:

India: Solar GIS irradiance maps indicate up to seven percent below average solar irradiation for the sub-continent over the last four years - reflecting the concerns of local asset managers about a decline in irradiance levels. This is particularly notable around highly developed areas where aerosols and cloud cover can impact resource availability. If this data isn't considered by developers, it could result in solar farms underperforming, with wider implications for investor confidence in one of the world's fastest growing solar markets.

This is a Ten-year analysis of resource variability across key global solar markets and highlights significant deviations from long-term averages.

c. Combined impact of degradation and Solar Resource Variation on CUF

It is evident from the above that, both degradation as well as negative solar resource variation combined together adversely impacts the CUF over the term of the PPA. The Petitioner therefore has assessed an impact of solar resources variation at various levels of 1%, 3.5%, 5% and 8% combined with the designed degradation over the life of the project. The results of the same are summarized below:

Irradiation, Degradation and CUF comparison : Tamil Nadu Projects					
Narbheram Solar TN Private Limited					
CUF	Irradiation variation				
	0.00%	1.00%	3.50%	5.00%	8.00%
CUF-Y-1	18.55%	18.36%	17.90%	17.62%	17.06%
CUF-Y-5	18.06%	17.88%	17.43%	17.16%	16.62%
CUF-Y-10	17.48%	17.30%	16.87%	16.60%	16.08%
CUF-Y-15	16.74%	16.32%	16.07%	15.56%	15.56%
CUF-Y-20	16.36%	16.20%	15.79%	15.54%	15.05%
CUF-Y-25	15.83%	15.67%	15.28%	15.04%	14.57%
Drop in CUF over life of the plant					3.98%

1.21. It is pertinent to note above that even a solar resource variation of 8% can result in a CUF of 17% (the lower band) in the first year of operation itself, when the plant is virgin and has not degraded much. Similar variation of resources over the life of the plant can pull down the CUF to less than 15%. Thus, even solely considering the factor of 8% variation in solar resources in the 25th year, the drop in CUF shall be nearly 40%, which is much, higher than the CUF band of 2% as provided in the PPA.

The gap between the maximum and minimum CUF is substantially wider in all the other PPAs executed by the Petitioner's group entities in the past and has been set out above at paragraph 1.16.

1.22. The generation at Petitioner's plant have been further impacted, since its commissioning in September, 2019, due to the Covid-19 pandemic & the consequent lockdown, cyclone and heavy rainfall. Due to these factors, the Petitioner faced several issues in its routine operation and maintenance tasks at site, including but not limited to the following, which impacted the Petitioner's ability to achieve minimum CUF of the project:

a. The Petitioner was unable to perform regular module cleaning, carry out preventive maintenance and other routine operation and maintenance tasks due to non-availability of manpower at site due to continued lockdown and restriction on movements which has a significant impact on generation, especially in the best generation months

(February to June) for the purpose of generation of solar power. The proof in that regard in the nature of communications by the contractor are also filed.

b. Delivery of all cleaning equipment, spares, consumables and components from suppliers were delayed due to lock down and restriction on movement of vehicles etc. due to which the petitioner was not able to carry out necessary repairs and replacements.

c. The Petitioner and its contractors were also prevented from carrying out the maintenance works like grass cutting, preventive and routine maintenance, breakdown rectifications, etc. due to lack of access caused by heavy rainfall and resultant heavy vegetation growth and water logging in and around the project area.

1.23. In this regard, the Petitioner has sent various letters dated 01-12-2020, 03- 06-2021, 04-08-2021 and 18-01-2022 informing the 2nd Respondent on the hurdles faced by the Petitioner in achieving the minimum CUF. However, no response has been received by the Petitioner.

1.24. The combined effect of the aforementioned factors, which are beyond the control of the Petitioner, has resulted in driving down the actual generation below the estimated generation units, due to which the Petitioner has already suffered a loss of revenue to the extent of the difference between actual generation and possible generation, calculated @ Rs. 3.47 per unit. Further, the Petitioner has been doubly impacted by imposition of CUF penalty for the difference in units between actual

generation and generation at 17% CUF, calculated @ Rs. 2.40/1.00 per unit.

1.25. The CUF band under per the PPA be reviewed and it is essential that Regulatory power is exercised in view of the above facts and an appropriate band be fixed, as the present CUF band is incapable of compliance. The Respondents have unilaterally deducted the amount of Rs.13,51,82,821/- against non-maintenance of minimum CUF without even providing the Petitioner with the calculation which affected the cash flow of the Petitioner.

1.26. As regards Invoice payments, in cases such as the Petitioner's, where there is a specific provision in the PPA enjoining upon the Respondent TANGEDCO to pay within the stipulated time, there is also provision for payment security mechanism which would be available for encashment if payment was not effected on or before the 60th day from Invoice, and TANGEDCO ought to be held liable to make good the claim for the same with accrued interest, otherwise it would render the whole purpose of incorporating such clauses hollow and meaningless.

1.27. Further, it is now apparent that the Respondent TANGEDCO deliberately delays payments to RE Generators who are always paid after conventional generators since the RE Generators are mostly smaller players. Further, as would be seen from their past conduct, the TANGEDCO, after withholding payments for a long term, after filing of petition in the Commission would belatedly offer 6% interest, and would further delay in making payment thereof.

1.28. The petitioner raised invoices for power supplied on a monthly basis as per the terms of the PPA. However, the Respondent has not only delayed the payment but has

also failed to pay the interest payable on delayed payments. The default on part of the Respondents to make payment for electricity supplied as per the terms of the PPA has made it difficult for the Petitioner to meet its commitments to its lenders as well as its contractors & vendors.

1.29. The Commission vide order dated 25.03.2019, in the case of Century Flours Mills vs TANGEDCO D.R.P.No. 21 of 2013 held that the TANGEDCO is liable to make payment of interest on delayed payments at 12% per annum in as follows:

> *"From the above, it is clear that the petitioner is entitled for an interest of 1 % per month i.e. 12% per annum for any delayed payment beyond 30 days. As such claim of the petitioner for interest at 12% as mentioned in Annexure "A If to the petition is correct. In view of the above, the petition is allowed. The respondents are directed to make the payments claimed by the petitioner after duly verifying the calculation within three months from the date of this order. "*

1.30. Over and above the Petitioner's claim towards refund of CUF Penalty, the sums due towards unpaid Invoices with respect to power supplied by the Petitioner is being set forth in the Invoices due for the period December, 2021 to July, 2022 is Rs.35,75,23,812/-.The Petitioner further reserves its rights to claim the interest accrued on the delayed payments till date.

1.31. The substantial delays in making payments by the Respondent have caused severe difficulties for the Petitioner in meeting the financial obligations towards banks and financial institutions. The delay in payments by TANGEDCO has severely affected the cash flow and working capital of the Petitioner which has hampered the Petitioner's capacity in carrying out proper operation and maintenance of the plant. It has duly

submitted the invoices to TANGEDCO, however, there has been no response to the same. The Commission vide its order dated 05.04.2022 passed in DRP 9 of 2021, directed the Respondent No.2 to furnish a Letter of Credit to the Petitioner in terms of the PPA which has not been complied with by TANGEDCO till date.

1.32. The statutory provisions which mandate solar power as “Must Run” are extracted as follows:-

(A) Regulation 5.2(u) of the Indian Electricity Grid Code Regulations, 2010 ("IEGC") notified by the CERC, provides as under:

> *"System operator (SLDC/ RLDC) shall make all efforts to evacuate the available solar and wind power and treat as a must-run station. However, System operator may instruct the solar /wind generator to back down generation on consideration of grid security or safety of any equipment or personnel is endangered and Solar/ wind generator shall comply with the same. For this, Data Acquisition System facility shall be provided for transfer of information to concerned SLDC and RLDC. "*

(B) Regulation 6.5(11) of the IEGC provides:

> *"11. Since variation of generation in run-of-river power stations shall lead to spillage, these shall be treated as must run stations. All renewable energy power plants, except for biomass power plants, and non-fossil fuel-based cogeneration plants whose tariff is determined by the CERC shall be treated as 'MUST RUN' power plants and shall not be subjected to 'merit order despatch' principles."*

1.33. Despite the mandatory "Must Run" status granted to solar power plants, the 3rd Respondent, SLDC frequently issued backing down/load curtailment ranging from 20% to 75%of the Petitioner's solar power plant and these instructions have been given orally vide telephone and on email. The details of Load Curtailment are tabulated herein below:

Particulars	Unit	Actual			
		2019-20	2020-21	2021-22	Total
		NSTN	NSTN	NSTN	NSTN
Curtailment Hours - Annual	Hours	**43**	**610**	**193**	**846**
Normative running Load	MW	90	90	90	
Load Curtailment - 75%					
% Curtailment*		75.00%	75.00%	75.00%	
No. of Spells		-	2.00	-	**2**
Hours		-	15.00	-	**15**
Load Curtailment - 50%					
% Curtailment*		50.00%	50.00%	50.00%	
No. of Spells		4.00	5.00	2.00	**11**
Hours		19.65	28.80	-	**48**
Load Curtailment - 30%					
% Curtailment*		30.00%	30.00%	30.00%	
No. of Spells		5.00	-	-	**5**
Hours		15.55	-	34.80	**50**
Load Curtailment- 25%					
% Curtailment*		25.00%	25.00%	25.00%	
No. of Spells		2.00	132.00	30.00	**164**
Hours		4.47	566.57	158.07	**729**
Load Curtailment - 20%					
% Curtailment*		20.00%	20.00%	20.00%	
No. of Spells		1.00	-	2.00	**3**
Hours		3.55	-	-	**4**
TOTAL SPELLS		**12**	**139**	**34**	**185**
TOTAL HOURS		**43.22**	**610.37**	**192.87**	**846**

* % Curtailment is the load reduction instruction issued by SLDC/GSS with respect to then subsisting running load. The loss in generation is much higher as the curtailment instruction is of an absolute percentage of the generation at that time [For example:

Curtailment instruction received at 8 AM to reduce the load by 50% for the next 4 hours. Now the generation capacity at 8.00 AM is say 20 MW, which increases to say 80 MW over time by 12 PM. But due to the curtailment instruction, the production still being limited to 10 MW, wherein the actual loss due to curtailment at 8 AM would be 10 MW (50% of 20 MW), the loss at 12 PM would be 40MW (50% of 80 MW), which is substantially higher than the loss at 8 A.M.]

1.34. As is evident from the above table, since the commissioning of the Petitioner's solar power plant, the 3rd Respondent has been issuing frequent backing down instructions to the Petitioner. The Petitioner is facing severe monetary loss due to the unjustified backing down instructions issued by the 3rd Respondent without rendering cogent reasons for the same.

1.35. The solar power is purchased at a single part tariff. Hence, if there is no injection, there will be no payment to the solar plants. Conversely, conventional generators get paid fixed charges even if power is backed down. But solar plants do not get fixed charges, even though back down is completely arbitrary, illegal, and unjustified on facts and in law. Backing down instructions have been given telephonically and on email on a post facto basis where no data has been created regarding the frequency and no logbook has been maintained. Such instructions are being issued to protect the commercial interest of TANGEDCO. The actions of the Respondents in issuing backing down instructions are completely arbitrary and against the regulations mandating must run status of the Petitioner's solar power plant.

1.36. Section 175 of the Electricity Act, 2003 provides that "its provisions are in addition to and not in derogation of any other law for the time being in force". Further, section 73 of the Indian Contract Act, 1872, provides for compensation for loss or damage caused by breach of contract. The PPA between the Petitioner and TANGEDCO, categorically states that “3 ... (a) The solar power generated shall be evacuated to the maximum extent subject to Grid stability and shall not be subjected to merit order dispatch principles." Consequently, the deemed generation compensation ought to be given to the Petitioner for loss of generation. Furthermore, it is relevant to highlight that, under Section 32(2)(a) of the EA, 2003, the 3rd Respondent is statutorily responsible for optimum scheduling and dispatch of electricity within the State of Tamil Nadu in accordance with the contracts entered into between TANGEDCO and generating companies.

1.37. However, in the present case, it is evident that the TANGEDCO has implemented wide-spread curtailment of RE power in the State (as was confirmed by POSOCO in its report filed in A.No 197 of 2019) and the same is not on account of grid security but for collateral reasons and economic considerations favourable to TANGEDCO. Hence, the Petitioner is entitled to damages/compensation for willful loss caused by the Respondents. The Respondents have conducted themselves in a manner contrary to the PPA and in violation of the provisions of statute and regulations.

1.38. Consequently, by failing to comply with the statutory mandate not to back down generation in the absence of any grid security or safety concerns, the Petitioner is

entitled to payment of monetary compensation for loss of the same economic position as it would have been had such unlawful and arbitrary instructions not been issued by the SLDC, for the benefit of TANGEOCO.

1.39. In this regard, it is relevant to note that the Hon'ble APTEL in its judgement dated 02.08.2021 in Appeal No.197 has categorically noted the independent report filed by POSOCO which has concluded as only 5.26% (60 out of 1140 blocks where solar was curtailed) of the cases of back down instructions appears to be justified from grid security perspective. It further noted that ". The back down instructions were being issued from commercial reasons is evident from the finding in the POSOCO report that the solar generators with per unit cost of Rs. 7.01 were curtailed more."

1.40. The Hon'ble Supreme Court in Union of India vs. United India Assurance Company Ltd. & Ors. (1997) 8 SCC 683, held that non-exercise of public law or statutory power did create a private law action for damages for breach of statutory duty. Further, the Hon'ble APTEL in TATA Power Company Ltd. vs. MERC & o.rs. Vide its judgement dated 14.11.2013, held that a party is entitled to claim compensation from SLDC after establishing that SLDC was guilty of legal mala-fide by knowingly breaching its statutory duty. The Hon'ble APTEL held:

> *"In Case No.1999(6) SCC 667 in Common Cause, A Registered Society Vs. Union of India, the Hon 'ble Supreme Court has held that the tort of "misfeasance in public office" is concerned with a deliberate and dishonest wrongful abuse of the powers given to a public officer and the purpose of the tort was to provide compensation to those who suffered loss as a result of improper abuse of power. In this judgement it has further been held that so far as the malice is concerned, while actual malice, if proved, would render Respondent's action ultra vires and*

tortious and it would not be necessary to establish actual malice in every claim for misfeasance in public office. This judgement was rendered by Hon 'ble Supreme Court on the basis of the various English cases. The relevant extract of the judgement is as follows:-

(6) Where a plaintiff establishes (i) that the defendant intended to injure the plaintiff or a person in a class of which the plaintiff is a member (limb one) or that the defendant knew that he had no power to do what he did and that suffered loss as a result, the plaintiff has a sufficient right or interest to maintain an action form is feasance in public office at common law. The plaintiff must of course also show that the defendant was a public officer or entity and that his loss was caused by the wrongful act.

47. The proposition which would emerge from the judgement in Common Cause is that to maintain an action for misfeasance in public office at common law, the party should establish the following ingredients of the tort for claiming compensation:-
i) It must be established that the defendant was a public officer or public entity and that the plaintiff's loss was caused by the wrongful act;
ii) It must be established that the defendant intended to injure the plaintiff or the defendant had the knowledge that he had no power to do what he did and due to the said act, the plaintiff would probably suffer loss or damage.
iii) The plaintiff has suffered loss as a result of the action of the defendant.
69. The State Commission has simply glossed over the manner in which the State Commission continued to deny scheduling of power, even after the date of quashing the Government Memorandums, and after knowing that such a refusal was contrary to law and would cause serious losses to the Appellant.

74. Similarly, SLDC also, even though it was informed that those Government memorandums have been quashed, had again refused to schedule power by merely stating that the earlier order passed by the State Commission on 29.9.2010 had not been quashed and therefore the request was refused to schedule the power. The stand now taken by SLDC both in the earlier Appeal No.32 of 2011 and in the present Appeal No.175 of 2012 that they are bound by the Government memorandums shows that SLOC for the reasons best known to it, has taken a different stand going hot and cold.

75. This conduct on the part of the State Load Despatch Centre which is public office can not be said to be bona-fide and genuine. When SLDC has got the knowledge that they can not rely upon the Government memorandums on the basis of which the earlier order passed by the State Commission on 29.9.2010

after they were quashed, even then they refused to schedule power to the Appellant as requested by the Appellant, would show the malafide attitude of SLDC and due to that the Appellant suffered a loss.

76. Therefore, we are of the view that since misfeasance has been established with the knowledge of SLOC, the Appellant is entitled to claim for compensation from SLDC. "

1.41. The same was rightly recognized by the Hon'ble APTEL in Apl. No. 197 of 2019, NSEFI Vs. TNERC & Ors. Vide its judgment dated 02.08.2021:

"133. The investments made in establishing solar projects, and the solar tariffs so determined, was premised on Must Run status as contemplated in the regulations framed under Act and the provisions in energy purchase agreement. If must run status is not adhered to by the Respondent TANGEDCO and SLDC in violation of law, the members of the Appellant association would be deprived of recovery of legitimate tariff. As solar power tariff is single part and it is predominantly fixed cost in nature, unauthorised curtailment will ultimately result in solar generators failing to repay their loans. If such actions are not penalised, the unauthorized curtailment will go unabated jeopardising the whole objective and intent of the Act. This conduct on the part of the State Load Despatch Centre which is public office cannot be said to be bona-fide and genuine. Therefore, we are of the view that since misfeasance has been established against TANGEDCO and TNSLDC, a statutory body under the Act, the Appellant is entitled to claim for compensation from TNSLDC and TANGEDCO. Both these entities shall jointly pay the compensation to the members of the Appellant Association."

1.42. The petitioner is therefore constrained to file the instant petition for exercise of Regulatory power for making a determination on the applicability of CUF bandwidth and issue appropriate directions in that regard, the consequential relief arising thereof and readjustments in relation thereto and it ought to be awarded the costs of the petition including court fees and legal expenses incurred pursuant to the provisions of Regulation 33 of the TNERC- Conduct of Business Regulations, 2004. The petition was initially filed seeking for a regulatory exercise and the Petitioner had paid a court fee of Rs.25,000/- in

this regard. However, by order dated 02.03.2023 in P.R.C. No. 1 of 2022, this Hon'ble Commission determined the amount in dispute since the Petitioner sought for a waiver of CUF penalty of Rs.7,35,66,000/- from the Respondent vide letter dated 18.01.2022. The Commission citing the said letter, determined that the said amount is an 'amount in dispute' under Regulation 10 of the Fees and Fines Regulations and directed the Petitioner to pay the deficit court fee of Rs.7,10,660/- (Rs.7,35,660 – 25,000) and the same was complied with by the Petitioner.

1.43. At the time of filling of this petition, as the claim of the petitioner for refund of CUF penalty from the Respondent stood at Rs. 13,51,82,821/-, the petitioner has paid further deficit court fee of Rs.6,16,169/- (Rs.13,51,829-Rs.7,35,660).

1.44. The instant petition has been filed within the period of limitation. All claims relate to sums due which are well within the 3 year period from arising of the cause of action. The PPA between the parties specifically contemplates amicable resolution and unfortunately, though the Respondent has never disputed the claims, it has not amicably resolved the issue, resulting in the petitioner to file the present petition.

1.45. The petitioner states that balance of convenience lies in favour of him and it would suffer irrepairable loss and injury if the prayers prayed for herein are not granted.

2. Contention of the petitioner in D.R.P.No.13 of 2023 :-

2.1. The Petitioner is engaged in the business of generation of renewable energy and has been operating a 100 MW solar power project located at Tuticorin District, in the State of Tamil Nadu. The details of the solar power project of the Petitioner in the State of Tamil Nadu are as under:

Project Location	Capacity	Date of Commission
Village – Pannikulam, Thenampatti & Therkumailodai, Tehsil – Kayathar, District – Tuticorin	100 MW	24.09.2019

2.2. The present petition is being filed seeking for appropriate Regulatory review and issuance of consequential directions concerning the operation of the Solar PPA which has been rendered impossible of adherence due to the CUF stipulation contained therein and consequently also issue further directions within the Regulatory domain with regard to the Power Purchase Agreement dated 26.09.2017 including amendments thereto entered into with the Respondent TANGEDCO.

2.3. There have been substantial delays even in settling Invoice dues. By inordinately delaying such payments, the Respondents have pushed the petitioner to financial distress by not only withholding payments under PPA but also not paying interest for the belated payments which is an automatic consequence of delayed payment. Further, unjustified backing down instructions issued by the 3rd Respondent SLDC without a mechanism to monitor backing down/curtailment instructions and recording proper

reason leading to loss of generation is required to be compensated. The "must-run" status of the Petitioner's solar power plant, which is guaranteed under the applicable Code and regulations and as well as consistently reiterated by the Commission need to be enforced reasons set out in this petition.

2.4. The standard methodology now being employed by the Respondent is to delay payment of Invoices to renewable Energy generators and then force them to give rebates against Invoices as a pre-condition to release payments and also seek for express undertakings seeking waiver of interest claims or agreeing for 50% rebate on interest. One such undertaking which the Petitioner was compelled to submit with TANGEDCO for release of payment, is being filed herewith. Such demand and procurement of undertakings strikes at the very root of a power purchase agreement and demonstrates the arbitrary use of power being exercised by one party to a contract. Such actions are contrary to the express regulatory scheme and contrary to the binding judgment of the Hon'ble Supreme Court where TANGEDCO was a party. The Hon'ble Supreme Court has held that obtaining rebates against payments were contrary to express terms of the EPA and are impermissible. It has therefore become necessary to approach this Commission to seek payments that have become due on an urgent basis and to seek enforcement of such payments.

2.5. The contentions and citations on Policy, Acts and grounds are same as advanced in the D.R.P.No.12 of 2023 except for the technical parameters and money values. Hence, the aforesaid narrations of facts and contentions would not require reiteration.

2.6. The Electricity Act, 2003, was enacted with a view to consolidate the different aspects of electricity generation and supply which were earlier governed by distinct legislations; and to streamline the entire process of generation and supply of electricity and pertinently, to encourage private sector participation in generation, transmission and distribution with a view to alleviating power production situation in the country.

2.7. In furtherance of the requirement to comply with Renewable Purchase Obligation (RPO), the 1st Respondent had announced solar tender through reverse auction. M/s.Narbheram Vishram, an affiliate of the petitioner was a successful bidder under Tender Specification No: CE/NCES/OT No.1/2017-18 issued by the 1st Respondent and has been awarded Letter of Intent (LOI) for setting up of 100 MW solar power project vide LOI Ref. No: CE/NCES/SE/SOLAR/EE/SCB/AEE3/F.M/s.NVR Energy Pvt. Ltd. / D.773/17 dated 29.08.2017.

2.8. Pursuant to the issuance of LOI, the petitioner had executed the Power Purchase Agreement ("PPA") with 1st Respondent TANGEDCO on 26.09.2017, wherein the 1st Respondent TANGEDCO had agreed to buy power from the Petitioner at Rs.3.47 per unit for a period of 25 years from the Commercial Operation Date i.e., from 24.09.2019.

2.9. The present petition is filed for the specific purpose of examination of the clause pertaining to CUF and its application to the petitioner's project. It is also to be noted that the agreement between the parties itself recognises that Acts of natural phenomena will be treated as a Force Majeure. It is also pertinent to state that the Regulatory Commissions have an overarching regulatory power over licensees. The Regulatory

Commissions continue to exercise continuous regulatory supervision over the parties and licensees especially over tariff. This is in order as the Preamble to the Electricity Act, 2003 contemplates taking measures conducive to development of the power sector while protecting the interest of consumers. Further the underlying basis of the Electricity Act is to ensure adherence to commercial principles with regard to tariff.

2.10. The Petitioner's day-to-day maintenance and power generation was severely impacted due to the backdown instructions issued by the 3rd Respondent and the non-payment of invoices raised by the Petitioner and as such, the Petitioner was unable to achieve minimum CUF of 17% as per the PPA. The maximum CUF stipulated under the PPA is 19% (max offtake) while in case of failure to achieve minimum CUF of 17% the Solar Power Developer is subjected to the payment of penalty.

2.11. When the plants are designed to suit such extremely narrow band of PPA, so as to neither exceed the maximum limit and not fall below the minimum limit, it is impossible to achieve the desired level of performance in case there is a slightest disruption in operation due to reasons beyond the control of a Solar Power Generator. Disruption in generation, due to the factors beyond the Petitioner's control, which are more particularly detailed in this petition, led to the loss in performance and resulted in the plant not adhering to the narrow CUF band, given the design limitations. The performance parameters of the Petitioner's plant are summarised below:

Financial Year	SPV	Design CUF – P- 50	Design CUF-P-75	Design CUF-P-90	Actual CUF	Possible CUF considering Curtailment + Irradiation Loss + Heavy Monsoon & COVID restrictions
2019-20	NVR Energy	18.86%	18.20%	17.60%	7.87%	17.83%
2020-21	NVR Energy	19.51%	18.83%	18.20%	13.66%	18.35%
2021-22	NVR Energy	19.38%	18.69%	18.08%	17.31%	18.60%

2.12. The plants have been designed to perform taking into consideration the standard and guaranteed degradation of Solar PV Modules and long term solar resources availability with minimal variations.

2.13. The respondents have unilaterally deducted the amount of Rs.11,53,11,360/- against non-maintenance of minimum CUF without even providing the Petitioner with the calculation which affected the cash flow of the Petitioner.

2.14. The petitioner has raised invoices for power supplied on a monthly basis as per the terms of the PPA. However, the Respondent has not only delayed the payment but has also failed to pay the interest payable on delayed payments. The default on part of the Respondents to make payment for electricity supplied as per the terms of the PPA has made it difficult for the Petitioner to meet its commitments to its lenders as well as its contractors & vendors.

2.15. Over and above the Petitioner's claim towards refund of CUF Penalty, the sums due towards unpaid Invoices with respect to power supplied by the Petitioner is being set forth in the Annexure. The Invoices due for the period December, 2021 to July, 2022

amounts to Rs.36,28,83,889/-.The Petitioner further reserves its rights to claim the interest accrued on the delayed payments till date.

2.16. Despite the mandatory "Must Run" status granted to solar power plants, the 3rd Respondent, SLDC frequently issued backing down/load curtailment ranging from 20% to 75%of the Petitioner's solar power plant and these instructions have been given orally vide telephone and on email. The details of Load Curtailment are tabulated herein below:

Particulars	**Unit**	**Actual**			
		2019-20	**2020-21**	**2021-22**	**Total**
		NSTN	**NSTN**	**NSTN**	**NSTN**
Curtailment Hours - Annual	Hours	**43**	**610**	**193**	**846**
Normative running Load	MW	90	90	90	
Load Curtailment - 75%					
% Curtailment*		75.00%	75.00%	75.00%	
No. of Spells		-	2.00	-	**2**
Hours		-	9.9	-	**10**
Load Curtailment - 50%					
% Curtailment*		50.00%	50.00%	50.00%	
NNo. of Spells		4.00	5.00	5.00	**14**
Hours		14.73	28.38	15.97	**59**
Load Curtailment - 30%					
% Curtailment*		30.00%	30.00%	30.00%	
No. of Spells		4.00	-	-	**4**
Hours		16.15	-	34.80	**16**
Load Curtailment- 25%					
% Curtailment*		25.00%	25.00%	25.00%	
No. of Spells		1.00	132.00	30.00	**163**
Hours		5.65	673.42	175.2	**854**
Load Curtailment - 20%					
% Curtailment*		20.00%	20.00%	20.00%	
No. of Spells		1.00	-	2.00	**3**
Hours		4.02	-	-	**4**
TOTAL SPELLS		**10**	**139**	**37**	**186**
TOTAL HOURS		**40.55**	**711.7**	**191.17**	**943**

* % Curtailment is the load reduction instruction issued by SLDC/GSS with respect to then subsisting running load. The loss is generation is much higher as the curtailment instruction is of an absolute percentage of the generation at that time.

2.17. As is evident from the above table, since the commissioning of the Petitioner's solar power plant, the 3rd Respondent has been issuing frequent backing down instructions to the Petitioner. The Petitioner is facing severe monetary loss due to the unjustified backing down instructions issued by the 3rd Respondent without rendering cogent reasons for the same.

2.18. However, in the present case, it is evident that the TANGEDCO has implemented wide-spread curtailment of RE power in the State (as was confirmed by POSOCO in its report filed in A.No 197 of 2019) and the same is not on account of grid security but for collateral reasons and economic considerations favourable to TANGEDCO. The Petitioner is entitled to damages/compensation for willful loss caused by the Respondents. The Respondents have conducted themselves in a manner contrary to the PPA and in violation of the provisions of statute and regulations.

> *"In Case No.1999(6) SCC 667 in Common Cause, A Registered Society Vs. Union of India, the Hon'ble Supreme Court has held that the tort of "misfeasance in public office" is concerned with a deliberate and dishonest wrongful abuse of the powers given to a public offer and the purpose of the tort was to provide compensation to those who suffered loss as a result of improper abuse of power. In this judgement it has further been held that so far as the malice is concerned, while actual malice, if proved, would render Respondent's action ultra vires and tortious and it would not be necessary to establish actual malice in every claim for misfeasance in public office. This judgement was rendered by Hon 'ble Supreme*

Court on the basis of the various English cases. The relevant extract of the judgement is as follows:-

74. Similarly, SLOC also, even though it was informed that those Government memorandums have been quashed, had again refused to schedule power by merely stating that the earlier order passed by the State Commission on 29.9.2010 had not been quashed and therefore the request was refused to schedule the power. The stand now taken by SLOC both in the earlier Appeal No.32 of 2011 and in the present Appeal No.175 of 2012 that they are bound by the Government memorandums shows that SLOC for the reasons best known to it, has taken a different stand going hot and cold.

75. This conduct on the part of the State Load Despatch Centre which is public office cannot be said to be bona-fide and genuine. When SLDC has got the knowledge that they cannot rely upon the Government memorandums on the basis of which the earlier order passed by the State Commission on 29.9.2010 after they were quashed, even then they refused to schedule power to the Appellant as requested by the Appellant, would show the malafide attitude of SLDC and due to that the Appellant suffered a loss.

2.19. The petitioner is therefore constrained to file the instant petition for exercise of Regulatory power for making a determination on the applicability of CUF bandwidth and issue appropriate directions in that regard, the consequential relief arising thereof and readjustments in relation thereto. The petitioner ought to be awarded the costs of the petition including court fees and legal expenses incurred pursuant to the provisions of Regulation 33 of the TNERC- Conduct of Business Regulations, 2004. The petition was initially filed seeking for a regulatory exercise and the Petitioner had paid a court fee of Rs.25,000/- in this regard. However, by order dated 02.03.2023 in P.R.C. No. 1 of 2022, the Commission determined the amount in dispute since the Petitioner sought for a waiver of CUF penalty of Rs.6,18,96,000/- from the Respondent vide letter dated

18.01.2022. The Commission citing the said letter, determined that the said amount is an 'amount in dispute' under Regulation 10 of the Fees and Fines Regulations and directed the Petitioner to pay the deficit court fee of Rs.5,93,960/- (Rs.6,18,960 – 25,000) and the same was complied with by the Petitioner.

2.20. At the time of filling of this petition, as the claim of the petitioner for refund of CUF penalty from the Respondent stood at Rs. 11,53,11,360/-, the petitioner has paid further deficit court fee of Rs.5,34,154/- (Rs.11,53,114-Rs.6,18,960).

2.21. The instant petition has been filed within the period of limitation. All claims relate to sums due which are well within the 3 year period from arising of the cause of action. The PPA between the parties specifically contemplates amicable resolution and unfortunately, though the Respondent has never disputed the claims, it has not amicably resolved the issue, resulting in the petitioner having to file the present petition.

3. Common Counter affidavit filed by the Second Respondent:-

3.1. All the allegation and averment contained in the above petition are denied except that those that are specifically admitted herein. The contents of the petition are wholly self-serving, baseless, and arbitrary and ought to be dismissed as untenable.

3.2. As per the tender Specification No. CE/NCES/OT.No.1/2017-18 TANGEDCO had issued LOI vide letter No.LOI. Ref. NO.CE/NCES/SE/SOLAR/EE/SCB/A EE3/ F.M/s.Narbheram /D. 774/ 17 dated 29.08.2017 as follows:-

"With reference to your offer and other correspondences cited above, I, acting for and on behalf of and by order and direction of Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO), accept your offer to sell the Solar Power to TANGEDCO at Rs.3.47 per kwhr to be generated from your proposed 100 MW solar power plant at Pulangal Village, Kamuthi Taluk, Ramnad District for supplying solar power to TANGEDCO under long term Power Purchase Agreement (PPA) for a period of 25 years subject to the following terms and conditions set forth herein.

2.0) Tariff:

The rate (Rs.3.47 per Kwhr) offered by you is FIRM AND FIXED for the entire agreement period.

3.0) Capacity Utilization Factor:

The Capacity Utilisation Factor (CUF) shall be 17 % to 19%, calculated on yearly basis. In case the availability is more than the maximum CUF specified i.e.19%, the TANGEDCO will purchase the excess generation, at Average Pooled Purchase Cost (APPC) or the PPA tariff or the applicable preferential tariff, whichever is less. In case the availability is less than the minimum CUF specified i.e.17%, the SPG shall pay TANGEDCO for the actual shortfall in terms of units at the prevailing forbearance price fixed by the CERC, since the TANGEDCO is an obligated entity to utilize solar power as per Hon'ble TNERCs RPO Regulation"

3.3. The relevant clauses of the PPA as follows

Tariff and Other Charges:

(a) Energy Charges:

The Solar Power Tariff of Rs.3.47 per unit finalized through reverse bidding shall be applicable to the SPG for the agreement period of 25 years i.e.25 years from the date of Commercial Operation of the solar power plant.

(b) Reactive Power Charges:

The reactive power charges shall be as specified in the Order on Open Access issued by the Commission from time to time.

(c) Start up Power Charges:

The drawal of energy by the SPG from the distribution licensee shall be adjusted against the exported energy for every billing period. In case, drawal of power is in excess over the exported power in a billing month, such excess drawal shall be billed, as per Commission's Tariff Order in force.

3.4. Capacity Utilisation Factor (CUF):

The capacity Utilisation Factor (CUF) shall be 17 % to 19%, calculated on yearly basis. In case the availability is more than the maximum CUF specified i.e.19%, the Distribution Licensee will purchase the excess generation, at Average Pooled Purchase Cost (APPC) or the PPA tariff or the applicable preferential tariff, whichever is less. In case the availability is less than the minimum CUF specified i.e.17%, the SPG shall pay Distribution Licensee for the actual shortfall in terms of units at the prevailing

forbearance price fixed by the CERC, since the Distribution Licensee is an obligated entity to utilize solar power as per Hon'ble TNERC's RPO Regulation.

3.5. Billing and Payment:

(a) The due date for payment of energy bill will be 60 days from the date of receipt (excluding the date of receipt) of bill in complete shape from the generator. The Distribution Licensee shall provide unconditional revolving and irrevocable LC which shall be drawn upon the SPGs.

(b) The Distribution Licensee shall provide LC from public sector/scheduled commercial bank. The payment shall be made on 60th day from the date of receipt of passed bill (Invoice) at LC opener's bank. If the 60th day (due date) happens to be a holiday for Distribution Licensee and/or Banks, then payment will be made on the next working day. All expenses relating to LC viz. Opening charges, Maintenance Charges, Negotiation Charges and renewal charges are to the account of SPGs. The revolving LC shall have a term of 12 months and validity of the LC shall be renewed year after year and remains valid upto expiry of the agreement and the amount shall also be renewed for an amount equal to 105% of the average of monthly billing of proceeding 12 months.

(c) The Distribution Licensee wherever necessary, shall raise a bill at the end of a billing period of one month for the power drawn by the SPG in excess over the exported power and the SPG shall make payment to the Distribution Licensee at HT temporary supply tariff within the time stipulated to the HT consumers in the Commission's Supply code, 2004 as amended from time to time.

3.6. Termination Compensation:

The Distribution Licensee and the SPG are restricted from unilateral termination or amendment of the PPA, as per the draft guidelines on Tariff based Competitive Bidding Process for Grid Connected Solar PV Power Projects issued by the MNRE.

Notwithstanding above, in case, such a scenario arises, there shall be a termination compensation to be paid in the following manner:

(i) Termination of PPAfor reasons solely attributable to the SPG:

The Distribution Licensee shall not be liable to pay any termination compensation to the SPG. The Lender(s} may take over the project and manage it themselves, or they may bring in new promoter(s) Save as otherwise provided in the guidelines, the SPG cannot terminate PPA to supply power to a third party.

(ii) For all other cases:

Save as otherwise excluded in the Force Majeure clause(s) 16 in this PPA, balance debt (as per the Debt-repayment schedule) or actual debt, whichever is less, minus the insurance coverage on the plant, shall be provided by the Distribution Licensee to the SPG. The solar power plant shall be handed over to Distribution Licensee.

Notwithstanding the above, the SPG may choose not to take the termination compensation and retain the project assets, with the consent of the lenders.

3.7. Terms of the Agreement:

(a) This agreement shall come into effect from the "Effective Date".

(b) The actual period of sale/purchase of power by the SPG/Distribution licensee under this agreement shall be valid for twenty five (25) years, subject to the COD and expiry date.

(c) After execution of PPA, the controlling shareholding (controlling shareholding shall mean more than 50% of the paid up share capital) in the Company developing the project shall be maintained for a period of 3 months after commencement of supply of power. Thereafter, any change can be undertaken under intimation to the Distribution Licensee. This condition would not apply to the cases where substitution of Promoter / Controlling Shareholder is necessitated by action of and request by Lending Financial Institution / Lender.

3.8. Second respondent further stated that the CUF band of 17 to 19 % was fixed based on the MNRE Guidelines.

a) In case of procurement in power (MW) terns, the range of Capacity Utilisation Factor (CUF) will be indicated in the bidding documents. Calculation of CUF will be on yearly basis. In case the project generates and supplies energy less than the energy corresponding to the minimum CUF, the Solar Power Generator will be liable to pay to the Procurer, penalty for the shortfall in availability below such contracted CUF level. The amount of such penalty will be in accordance with the terms of the PPA, which shall ensure that the Procurer is offset for all potential costs associated with low generation and supply of power under the PPA, subject to a minimum of 25% (twenty-five per cent) of the cost of this shortfall in energy terms, calculated at PPA tariff.) "

3.9. Based on the MNRE specification for tender was issued to all the plants.

3.10. The based on the tender specification PPA has been signed .During the above period the petitioner has not objected for the CUF (17 to 19%) clause.

3.11. After the COD (i.e 24.09.2019), the petitioner has filed the petition now for revised CUF band and submits that Force Majeure condition is not applicable for the solar power generating units.

3.12. The % of CUF was already agreed by the petitioner and the signed PPA cannot be modified by the petitioner unilaterally.

3.13. "The outstanding amount payable by the TANGEDCO are being paid under 48 equated monthly instalment up to March 2022 as per MoP Guidelines dated 03.06.2022. For outstanding generation bills with LPS (12%) for delayed period, after the period of March 2022 the generator is having facility to get the payment through PRAAPTI Portal, which the petitioner has failed to avail. However TANGEDCO is processing the tariff payable for the Supply of energy generated from 4/2022 to till date with require to PRAAPTI Portal for the solar generation, which is a Portal created by the Ministry of Power for adopting a strict mechanism.

3.14. The Tamil Nadu State is having highest infirm Renewable Energy installed capacity than the rest of the country, and in spite of technical constraints and huge financial loss by way of paying penalty, compensation charges, the TANGEDCO is taking all measures to accommodate maximum level of renewable resources consciously to maintain 24x7 continuous supply to the common public/consumers as per

the Tamil Nadu Government Policy without any major disturbance within the State as well as to avoid any cascaded effects to neighboring States and not to breach the grid discipline/grid security.

4. Common Counter Affidavit filed on behalf of the respondent No.3 :-

4.1. The State Load Despatch Centre (SLDC) is functioning as an apex body as per sections 32 & 33 of the Electricity Act and acting under the direction of the Southern Regional Load Despatch (SRLDC), Bangalore who in turn, is acting under the control of Grid Controller of India Limited (Formerly known as Power System Operation Corporation Limited (POSOCO))which is the sole authority of the National Grid (one Nation one Grid).

4.2. As per the Section 32 & 33 of Electricity Act, 2003, Clause 2.7 of Indian Electricity Grid Code (IEGC), Clause 4.2(e), 8.4 (iii) and (v) of the Tamil Nadu Electricity Grid code (TNEGC), SLDC is maintaining the TN Grid to provide continuous quality power to the common public throughout the State by maintaining Grid discipline and thus providing the public secure power supply without any major disturbance. Hence, SLDC is in the position to restrict any surplus power injected into the grid which is more than the requirement for reliable grid operation. The relevant clauses that are germane for proper adjudication of the present case is quoted as hereunder:

Section 32 of the Electricity Act, 2003

"*(1) The State Load Despatch Centre shall be the apex body to ensure integrated operation of the power system in a State.*

(2) The State Load Despatch Centre shall-

(a) be responsible for optimum scheduling and despatch of Electricity within a State, in accordance with the contracts entered into with the licensees or the Generating companies operating in that State ;

(b) monitor grid operations;

(c) keep accounts of the quantity of electricity transmitted through the State grid;

(d) exercise supervision and control over the intra-State transmission system; and

(e) be responsible for carrying out real time operations for grid control and despatch of electricity within the State through secure and economic operation of the State grid in accordance with the Grid standards and the State Grid Code."

(3) The State Load Despatch Centre may levy and collect such fee and charges from the generating companies and licensees engaged in intra-State transmission of electricity as may be specified by the State Commission".

Section 33 of the Electricity Act, 2003

"(1) The State Load Despatch Centre in a State may give such directions and exercise such supervision and control as may be required for ensuring the integrated grid operations and for achieving the maximum economy and efficiency in the operation of power system in that State.

(2) Every licensee, generating company, generating station, substation and any other person connected with the operation of the power system shall comply with the direction issued by the State Load Despatch Centre under subsection (1).

(3) The State Load Despatch Centre shall comply with the directions of the Regional Load Despatch Centre.

(4) If any dispute arises with reference to the quality of electricity or safe, secure and integrated operation of the State grid or in relation to any direction given under sub-section (1), it shall be referred to the State Commission for decision:

Provided that pending the decision of the State Commission, the direction of the State Load Despatch Centre shall be complied with by the licensee or generating company.

(5) If any licensee, generating company or any other person fails to comply with the directions issued under sub-section(1), he shall be liable to penalty not exceeding rupees five lacs".

Clause 2.7 of the Indian Electricity Grid Code

"2.7.1 In accordance with section 32 of Electricity Act, 2003, the State Load Despatch Centre (SLDC) shall have following functions:

(1) The State Load Despatch Centre shall be the apex body to ensure integrated operation of the power system in a State.

(2) The State Load Despatch Centre shall -

(a) be responsible for optimum scheduling and despatch of electricity within a State, in accordance with the contracts entered into with the licensees or the generating companies operating in that State;

(b) monitor grid operations;

(c) keep accounts of the quantity of electricity transmitted through the State grid;

(d) exercise supervision and control over the intra-State transmission system; and (e) be responsible for carrying out real time operations for grid control and despatch of electricity within the State through secure and economic operation of the State grid in accordance with the Grid Standards and the State Grid Code.

2.7.2 In accordance with section 33 of the Electricity Act, 2003. the State Load Despatch Centre in a State may give such directions and exercise such supervision and control as may be required for ensuring the integrated grid operations and for achieving the maximum economy and efficiency in the operation of power system in that State. Every licensee, generating company, generating station, sub-station and any other person connected with the operation of the power system shall comply with the directions issued by the State Load Depatch Centre under subsection (1) of Section 33 of the Electricity Act,2003.

The State Load Despatch Centre shall comply with the directions of the Regional Load Despatch Centre".

Clause 4.2.(e) of the Tamil Nadu Electricity Grid Code

" ... The SLDC shall be responsible for carrying out real time operations for Grid control and dispatch the electricity within the State through secure and economic operation of the state grid in accordance with the grid standards and grid code…."

Clause 8.4 (iii) and (v) of the Tamil Nadu Electricity Grid code

8.4 (iii) *"…the SLDC may direct the generating stations / beneficiaries to increase or decrease their generation/drawal in case of contingencies e.g. overloading of lines*

/transformers, abnormal voltages, threat to system security. Such directions shall immediately be acted upon "

8.4 (v) "All entities shall abide by the concept of frequency linked load despatch and pricing of deviations from schedule i.e. unscheduled interchanges. All generating units of the entities and the licensees shall normally be operated according to the standing frequency linked load despatch guidelines issued by the SLDC to the extent possible, unless otherwise advised by the SLDC".

4.3. The Hon'ble Central Electricity Regulatory Commission's (CERC) Deviation Settlement Mechanism stipulates the under drawl of not more than 250 MW and the grid operating frequency range of 49.90-50.05 Hz from 30.05.2016 onwards. Tamil Nadu, which is a renewable rich state, finds maintaining Grid Discipline a very challenging one. It has proved to be very difficult to operate the grid during less demand period, night hours, rainy season with higher % mix of infirm RE power and firm conventional power. Any failure or any in-action to contain the frequency 49.90-50.05 Hz and restriction in under-drawal is viewed as grid indiscipline attracting penal action by the Southern Regional Load Dispatch Centre. Hence, the legal provisions do not permit injection of surplus power into the system.

4.4. The Regulation 5.2 (u) of IEGC, 2010 reads as follows: -

> *"(u) Special requirement for Solar and Wind generators: System operator (SLDC/RLDC) shall make all efforts to evacuate the available wind power and treat as a must-run station. However, System operator may instruct the solar / wind generator to back down generation on consideration of grid security or safety of any equipment or personnel is endangered and solar / wind generator shall comply with the same".*

As stipulated in the clause 5.2 (u) of IEGC 2010, the system operator makes all efforts in accommodating maximum power and initiate curtailment action under circumstances of grid security and in consideration of safety of equipment within the grid operating frequency range of 49.90-50.05 Hz specified by the CERC vide the notification dated 06.01.14. Hence, it is a regulatory mandate to curtail injection of power whenever the grid conditions warrant.

4.5. The Clause 3(4) of Tamil Nadu Electricity Grid Code reads as follows:-

"3(4) ….. It is nevertheless necessary to recognize that the Grid Code cannot predict and address all possible operational situations. Users must therefore understand and accept that, in such unforeseen circumstances, the State Transmission Utility (STU) who has to play a key role in the implementation of the Grid Code may be required to act decisively for maintaining the Grid regimes for discharging its obligations. Users shall provide such reasonable co-operation and assistance as the STU may request in such circumstances".

<u>Indian Electricity Grid Code (IEGC) - 2nd Amendment with effect from 17.02.2014.</u>

Clause 5.2(m) - All Users, SEB, SLDCs, RLDCs, and NLDC shall take all possible measures to ensure that the grid frequency always remains within the 49.90 –50.05 Hertz band.

Clause 5.4.2(a) - SLDC/ SEB/distribution licensee and bulk consumer shall initiate action to restrict the drawal of its control area, from the grid, within the net drawal schedule.

Clause 6.4.6 - …….. Maximum inadvertent deviation allowed during a time block shall not exceed the limits specified in the Deviation Settlement Mechanism Regulations. Such deviations should not cause system parameters to deteriorate beyond permissible limits and should not lead to

unacceptable line loadings. Inadvertent deviations, if any, from net drawal schedule shall be priced through the Deviation Settlement mechanism as specified by the Central Commission from time to time.

Clause 6.4.7 - The SLDC, SEB/distribution licensee shall always restrict the net drawal of the state from the grid within the drawal schedules keeping the deviations from the schedule within the limits specified in the Deviation Settlement Mechanism Regulations.

CERC (Deviation Settlement Mechanism and related matters) Regulations, 2014, dated 06.01.2014 (with effect from 17.02.2014

Clause 3. Objective

The objective of these regulations is to maintain grid discipline and grid security as envisaged under the Grid Code through the commercial mechanism for Deviation Settlement through drawal and injection of electricity by the users of the grid.

CERC(Deviation Settlement Mechanism and related matters)(Third Amendment) Regulations, 2016 (with effect from 30.05.2016)

Deviation Limits for Renewable Rich States

S.No	States having combined installed capacity of Wind and Solar projects	Deviation Limits (MW)- "L"
1	1000– 3000 MW	200
2.	> 3000 MW	250

As Tamil Nadu having more than 3000 MW of RE power, Deviation Limits for Tamil Nadu is (+/-) 250 MW.

4.6. In view of the regulatory commitments and due to increase in grid frequency above the operating level of 49.90 Hertz to 50.05 Hertz notified by the Central Electricity Regulatory Commission during load crash/off peak period etc., the SLDC is mandated under the Grid Code to issue back down instructions to all the TN grid connected generators including wind and solar generators. Section 2(54) of the Electricity Act, 2003, defines real time operations. SLDC has issued backing down instructions only as per Section 2(54) of Electricity Act 2003 which reads as follows:

> *2(54)- "real time operation" means action to be taken at a given time at which information about the electricity system is made available to the concerned Load Despatch Centre;*

4.7. In order to maintain the grid discipline and grid security after taking all possible steps to reduce generation of conventional power and surrendering of CGS Power etc., the infirm Renewable Energy generation are curtailed. The last resort to curtailment is taken in view of the must run status of these infirm generations. In order to avoid any untoward incidents of blackout, the grid security is managed by instant oral instructions to Sub LD centers at Chennai, Madurai and Erode. These Sub LD centers in turn issue back-down instructions to the concerned substations to which the respective solar generators are connected. The procedure of giving immediate oral instructions takes one-to-two-time blocks of 15 minutes each and the curtailment could be realized at the SLDC in the 3rd block. Immediately after issuing oral instruction, written communication

of each instruction has been communicated to the solar developers from 15.07.2019 onwards .i.e before the commissioning date of 24.09.2019 of the Petition's solar power projects.

4.8. TN SLDC is maintaining the State grid without any major grid disturbances for more than twenty years. The Load - Generation balance has to be maintained within the permissible limit in real-time to avoid grid collapse by every State/Utility as it is Pan India one. If not, islanding/blackout may happen which may get extended to the other parts of the Nation. In that case, the restoration of the grid may take few hours/days. The consumers will be affected without power supply for hours/days together. During the Year 2012 such incidents occurred in Northern, Eastern & Central part of India except Southern Grid. During that time, 620 million people were without power supply for 3 consecutive days. There were two consecutive occasions during July, 2012. If SLDC does not control grid parameters, then violation message is issued by the SRLDC to control the above parameters. In the violation messages, POSOCO has directed to control the under drawl within the specified limit, citing IEGC Clauses 5.4.2(a), 5.4.2(b), 6.4.6, 6.4.7, 6.4.10, 6.4.12, with a comment to restore to schedule, stating as emergency condition of the grid.

4.9. It is essential to have information about how much RE power is expected to be injected into the grid. Such information is lacking in regard to infirm sources such as Wind and Solar. Accurate Forecasting and scheduling of generation along with

commercial mechanism from these sources is very important for balancing and to procure requisite reserves to maintain load-generation balance for grid reliability.

4.10. The SLDC is maintaining the TN Grid without any occurrence grid collapse. It is the Statutory obligation of SLDC to ensure continuous power supply to the consumers of the State of Tamil Nadu in accordance with the Statutory provisions in the Electricity Act, 2003, IEGC, TNEGC, CERC/TNERC. The 'Must Run' status provision is subject to grid security only. The back down instructions have been issued to the petitioner's solar plant in the real time grid operation towards for maintaining grid discipline and security.

4.11. The petitioner's averment that "*the Petitioner's day-to-day maintenance and power generation was severely impacted due to the back down instructions issued by the 3rd Respondent*" is denied since the Petitioners had admitted themselves that they are unable to achieve minimum CUF of 17% as per the PPA in Para 21 to 24 of the Petitions citing the major reasons mentioned as follows;

- Design parameters of the Plant
- Negative variation in irradiation
- Degradation
- Solar Resource variation
- Covid-19 pandemic & the consequent lockdown
- cyclone and heavy rain and etc.

4.12. The respondent further submit as follows:

a) The losses due to curtailment of solar generators shall be made good only if the curtailment is due to any other reasons other than grid security. But, in this case, the curtailment has been being done for the purpose of the Grid safety and security as per CERC's Deviation Settlement Mechanism and Indian Electricity Grid Code, Clause 5.2(u). Hence, making good the losses incurred by wind and solar generators does not arise.

b) back down instructions issued during the period from 24.09.2019 to June-2021 towards maintaining grid discipline/security in the real time grid operation clearly set out the following details:

- Date
- Block Time
- De block Time
- Duration
- Frequency
- Maximum Deviation during previous five blocks in Mega Watts
- Back down Quantum in own thermal stations in Mega Watts
- Back down Quantum in CGS thermal in Mega Watts
- Back down Quantum in LTOA in Mega Watts
- Back down Quantum in MOA in Mega Watts
- Total Back down Quantum in Mega Watts

- Reasons for Back down

c) In the quarterly report furnished to the Commission as directed in M.P. No. 16 of 2016, it has been mentioned that the grid security parameters, i.e as grid frequency and Deviation Settlement Mechanism (DSM) Limits are breached, the upper limits at that time of backing down instruction were issued due to Load Crash conditions for heavy rain, festival holidays, etc. The details of the curtailment instruction along with reasons for curtailment from July-2019 to Mar-2022 has been filed. Other than the days and period mentioned in the above report, back down instruction has not been issued from SLDC towards maintaining grid discipline/security.

d) As the Petitioner had pointed out the curtailment details upto Jan-2022, 15 minutes block wise scheduled generation from the CGS, LTOA & MTOA generators, scheduled generation from TANGEDCO thermal stations & Independent Power Projects (IPP) after being reduced to technical minimum, &scheduled generation from other sources, back down instructions issued to the solar generators from SLDC for the period from 25.09.2019 upto Jan-2022 (Nil back down instructions issued from SLDC for the period from 17.01.22 to 31.01.22) are filed.

e) The Section 33(1) of the Electricity Act, 2003, provides that "*the State Load Despatch Centre in a State may give such directions and exercise such*

supervision and control as may be required for ensuring the integrated grid operations and for achieving the maximum economy and efficiency in the operation of power system in that State".

Hence the averments of the petitioners that "*the actions of the Respondents in issuing backing down instructions are completely arbitrary" is* denied.

4.13. a) The Clauses 2(d), 3(a) and 3(l) of the Power Purchase Agreement (PPA) entered between the Petitioners and the Distribution Licensee, TANGEDCO are mandatory for parallel operation of any generator with the Licensee's Grid. The grid security throughout the State is maintained based on the provisions of the Electricity Act, IEGC and TNEGC and CERC/TNERC Regulations and hence curtailment instructions issued in view of grid safety and security are not in contravention of the Electricity Act or prevailing Laws including the provisions of the PPA. The following Clauses are also part of the PPA.

Clause 2(d) - *"Both the parties shall comply with the provisions contained in the Indian Electricity Grid Code, Tamil Nadu Electricity Grid Code, the Electricity Act, 2003, other Codes and Regulations issued by the Tamil Nadu Electricity Regulatory Commission/Central Electricity Authority(CEA)".*

Clause 3(a) - "The Solar power generated shall be evacuated to the maximum extent subject to Grid stability and shall not be subjected to merit order dispatch principles"

Clause 3(l)- "Grid availability shall be subject to the restriction and control as per the orders of the State Load Despatch Centre (SLDC) consistent with the provisions of the Electricity Act, 2003 (CA 36 of 2003) and regulations made thereon."

From above Clauses, it is clear that the injection/despatch of solar power is subject to maintenance of the safety and security of Grid and to this extent the seeking compensation for losses faced by the Petitioners, due to alleged arbitrary curtailment of RE is not tenable.

b) The Section 37 of the Indian Contract Act, 1872 reads as follows:-

"Section 37 – Obligation of parties to contracts- The parties to a contract must either perform or offer to perform their respective promise."

There is a promise on the part of the Petitioner to abide by Clauses 2(d), 3(a) and 3 (l) of the Power Purchase Agreement. Hence, the loss of revenue as alleged by the Petitioners cannot be a ground for absolving its obligation, to adhere to the backing down and curtailment instructions, issued by the Respondent in the safety of the Grid.

c) The Appellate Tribunal for Electricity in the Order, dated 16.05.2011 in Appeal No. 123 of 2010 has held **(Typed set Page No. 15 to 42)** as follows:

"In our opinion the Section 70 and 72 of the Indian Contracts Act, 1872 will not be applicable in the present case. The present case is governed by the Electricity Act, 2003 which is a complete code in itself. In the electricity grid, the SLDC, in accordance with Section 32 of the Act is responsible for

scheduling and dispatch of electricity within the state, to monitor the grid operations, to exercise supervision and control over the intra-state transmission system and to carry out grid control and dispatch of electricity through secure and economic operation of the State Grid. All the generators have to generate power as per the schedule given by the SLDC and the grid code in the interest of secure and economic operation of the grid. Unwanted generation can jeopardize the security of the grid"

4.14. The petitioner has referred the Judgment dated 02.08.2021, passed by the Hon'ble Appellate Tribunal for Electricity, in Appeal No. 197 of 2019 with respect to compensation for the curtailment of energy other than the grid security purposes. The Hon'ble APTEL has relied on the POSOCO findings. The POSOCO has analyzed the data in 15 minutes under post facto whereas the grid security parameters are monitored on real time basis. Further, Deviation Settlement Mechanism Limits, as stipulated by the CERC, has not been considered as a Grid Security parameter in the above Judgment. Because of error in law on various grounds, a Civil Appeal has been filed by the SLDC/Tamil Nadu Transmission Corporation Limited and the Tamil Nadu Generation and Distribution Corporation Limited before the Hon'ble Supreme Court of India vide Civil Appeal No. 2572 of 2022.

The aforesaid Civil Appeal is pending before the Hon'ble Supreme Court of India. Even though there is no stay, no finality has been reached and hence reliance placed on the APTEL Order by the petitioner is not appropriate.

4.15. Back down instructions were issued to the petitioners based on the real time grid parameters. Any analysis which is after curtailment of RE taking into consideration subsequent blocks in which the grid parameters were brought under control would not reveal true picture as to why the curtailment was carried out. A post facto analysis would never reveal the accurate conditions which warranted the curtailment in real time by the SLDC. A decision has been made in the real time operation for grid safety by the SLDC. Questioning the decision taken on real time by the petitioners at a later date is not appropriate. The POSOCO in its report submitted to APTEL with respect to Appeal No. 197 of 2019, has clearly mentioned as follows;

"Note: - All the above analysis is based on post facto Frequency, generation and Drawal data whereas TN SLDC system operator may have taken actions based on prevailing frequency and estimate on likely frequency, RE generation and drawal in subsequent blocks".

4.16. The deemed generation could not be ascertained/permitted in the absence of forecasting & scheduling along with commercial mechanism due to the infirm& volatile nature of RE sources. The deemed generation could not be permitted since back down instructions issued for network issue & overloading of equipment also come under the grid security definitions.

4.17. As the Tamil Nadu State is having highest infirm Renewable Energy installed capacity than the rest of the country, in spite of technical constraints and huge financial loss by way of paying penalty, compensation charges, the TN SLDC is taking all measures to accommodate maximum level of renewable resources consciously managing the Grid reliability parameters on a secured manner to maintain 24x7 continuous supply to the common public/consumers as per the Tamil Nadu Government Policy without any major disturbance within the State as well as to avoid any cascaded effects to neighboring States and not to breach the grid discipline/grid security.

5. Common Additional Counter Affidavit filed by the 2nd respondent :-

5.1. The Petitioners in the respective claim have sought for refund of Rs.13,51,82,821/ - in D.R.P.No. 12 of 2023 and Rs.11,53,11,360/- in D.R.P.No. 13 of 2023 said to have been deducted as forbearance price towards CUF for the financial year 2019-2020 and 2020-2021.

5.2. The CERC in Suo Mota Petition. No. 5/SM/2020 has determined the forbearance and floor price for REC frame work in accordance with first proviso of Regulation 9(1) of CERC Regulations 2010 for solar and non-solar Renewable Energy Certificates.

5.3. As per the Suo Moto order Petition No. 2/SM/2017 dated 31.03.2017, the forbearance price was fixed at Rs.2400 from 01.04.2017 onwards. Subsequently by

order dated 17.06.2020, the forbearance price was reduced to Rs.1000 from 01.07.2020 till 30.06.2021 and was ordered to remain until further orders of the commission.

5.4. The CUF penalty imposed on the Petitioners was for the periods 2019-2020, 2020-2021. According to the order dated 31.03.2017, 31.03.2020 and 17.06.2020, the forbearance price applicable for Petitioner in D.R.P.No.12 of 2023 is Rs.17,42,78,400/ - However so far, only a sum of Rs.13,51,59,600/- has been collected. The balance amount of Rs.3,91,18,800/- has to be recovered. Likewise, in so far as the Petitioner in DRP.No.13 of 2023 is concerned the actual forbearance price is Rs.14,22,47,400/- However, the only a sum of Rs.11,53,11,360/- has been collected and the balance amount to be recovered is Rs.2,69,36,040/ -. The Respondent has erroneously applied Rs.1000 towards forbearance price per MWh instead of Rs.2400/- for the period from 24.09.2019 to 30.06.2020. The corrected calculation sheet is filed along with this Additional Counter Affidavit. The Respondent reserves its rights to recover it in the future bills from the respective Petitioners. Since the above penalty has been imposed as per clause 6 of the PPA Agreement dated 26.09.2017 entered with the Petitioners and the forbearance price is fixed by CERC as referred above, the Petitioners in the both the petitions are not entitled to refund of any amount deducted in this regard. Hence the claim for the refund is not sustainable and liable to be dismissed. Furthermore, the PPA Agreement cannot be altered at the whims and fancy of the petitioner as there is

financial implication on TANGEDCO and as many as 190 generators with the capacity 3883MW of solar energy would be effected.

6. Common Additional Affidavit filed on behalf of the Petitioner :-

6.1. Request was made to the 2nd Respondent on several occasions, *vide* letters dated 1 December 2020, 3 June 2021, 4 August 2021, and 18 January 2022, to provide justification for deductions made in the payments due to the Petitioners. However, no reply or justification for such deductions was ever received from the Respondents. Upon the assumption that such deductions were towards CUF penalties, the Petitioners are constrained to approach the Commission seeking regulatory review of the CUF band.

6.2. However, on 10.04.2024, when all pleadings in the matter were completed and the case was posted for the Respondents' oral arguments, the Respondents arbitrarily filed an Additional Typed Set, which included a calculation sheet for the deductions made from the payments due to the Petitioners. Initially, the 2nd Respondent claimed that the deductions were solely for forbearance charges and not CUF penalties. This calculation reflected that forbearance charges of INR 4.49 Crores and INR 4.32 Crores had allegedly been collected in excess from Narbheram Solar TN and NVR Energy, respectively.

6.3. These figures were then revised in the Respondents' Additional Counter Affidavit and Additional Typed Set was filed on 16.04.2024, purportedly to correct the previous

calculations and reconcile the sums deducted. This revision indicated that further sums of INR 3.91 Crores and INR 2.69 Crores were to be recovered as CUF penalties for the periods 2019-20 and 2020-21 from Narbheram Solar TN and NVR Energy, respectively. The revised calculation does not take into account the modification in the Forbearance Price in 2020-2021 on a time-weighted average basis and calculates the Forbearance price on a monthly basis, resulting in further deduction of 6 Crores, in addition to the INR 25.05 Crores already deducted by the Respondent. Such a basis for calculation is incorrect, as CUF is calculated on a yearly basis and imposing penalties based on a monthly calculation is untenable and contrary to the terms of the PPA.

6.4. The calculations and the subsequent revisions submitted by TANGEDCO are merely post action attempt to justify the retention of amounts already deducted. The varying calculations and revisions show that even TANGEDCO has no clear or consistent basis for these deductions towards CUF penalties. Both the calculation sheets fail to reconcile and consequently justify the total deducted amount of INR 25.05 Crores from Narbheram Solar TN and NVR Energy towards the purported CUF penalties levied by the Respondents. A comprehensive breakdown of the CUF penalty levied, both with and without consideration of impact factors, along with a summary, is filed.

6.5. Having been given the opportunity for the first time to examine the basis of the deductions made by the Respondents towards CUF penalties based on data received subsequent to the filing of the present petition, this affidavit is filed to place on record

additional submissions arising from the Respondents' varying calculations of the CUF penalty levied on the Petitioner. Upon reviewing the terms of the PPA and erroneous implementation in the data submitted by TANGEDCO subsequent to the filing of the present petition, it becomes evident that the Petitioner has consistently operated within the CUF band, justifying the relief for the refund of deductions towards CUF penalty. The Commission may review the terms of the PPA and determine if its implementation has been carried out appropriately, considering the submissions set out below.

A. TANGEDCO's calculation of the Petitioner's CUF from 24.09.2019 to 31.03.2020 and the imposition of an annual CUF requirement for a partial year, particularly for RE generators dependent on seasonal variations, is untenable.

6.6. The 2nd Respondent has calculated the CUF penalty for FY 2019-20 from 24.09.2019 to 31.03.2020, which is inconsistent with the terms of the PPA. The calculation of the CUF penalty from 24.09.2019 would not arise as it was before the Commercial Operation Date of the Petitioner's plant. As per Clause 15 of the PPA, the Commercial Operation Date is considered as 30 days from the actual date of commissioning of the first part capacity, i.e., 30 days from 24.09.2019. That the Petitioners' Commercial Operation Date is 24.10.2019 has been admitted by TANGEDCO, as evident from its letter dated 01.11.2019. Further, when the projects commissioned during this period, i.e., from 24.09.2019 to 24.10.2019, are considered for

payment of energy at only 50% of the PPA tariff until the Commercial Operation Date, the question of CUF penalty does not arise and such levy is indisputably unlawful.

6.6. Clause 6 of the PPA dated 26.09.2017 states as follows:

> "*The CUF shall be 17% to 19% calculated on yearly basis. In case the availability is more than the maximum CUF specified i.e.19%, the Distribution Licensee will purchase the excess generation, at Average Pooled Purchase Cost (APPC) or the PPA tariff or the applicable preferential tariff, whichever is less. ..*

6.7. It is evident from the above-extracted clause that the PPA only contemplates calculation of CUF on a yearly basis. The calculation of the Petitioner's CUF from 24.09.2019 to 31.03.2020 and the imposition of an annual CUF requirement for a partial year, particularly on RE generators which depends on seasonal variations, is untenable. The PPA provides for the calculation of the CUF on a yearly basis and not pro-rata for part of the year. The levy of CUF penalty for the period from October 2019 to March 2020 is contrary to the terms of the PPA.

6.8. When the PPA contemplates calculation of CUF only on a yearly basis, calculating CUF from the COD to the end of the financial year and then imposing a penalty on a half yearly basis, is wholly untenable and unlawful. The subsequent tenders explicitly define Contract Year and provide for consideration of CUF on a pro-rata basis. If such an interpretation on a pro-rata basis is to be maintained, and selective reference is drawn from subsequent tenders to give meaning to the annual basis mentioned in the

Petitioner's PPA, the benefit of the same clause, (where no penalty is levied for shortfall from the CUF band) should also be extended to the Petitioner.

6.9. Calculating CUF from the COD to the end of the financial year and then imposing a penalty on a half yearly basis, is wholly untenable and unlawful. The terms of the contract have to be construed strictly and cannot be varied to suit either party's interests. In this regard, reliance is placed on the decision of the Hon'ble Supreme Court in, *Rajasthan State Industrial Development and Investment Corporation and Anr. Vs. Diamond & Gem Development Corporation Ltd. & Anr.* (2013) 5 SCC 470, wherein, on the issue of interpretation of certain clauses of the PPA, it has been observed as follows:

> "*23. A party cannot claim anything more than what is covered by the terms of contract, for the reason that contract is a transaction between the two parties and has been entered into with open eyes and understanding the nature of contract. Thus, contract being a creature of an agreement between two or more parties, has to be interpreted giving literal meaning unless, there is some ambiguity therein*. *The contract is to be interpreted giving the actual meaning to the words contained in the contract and it is not permissible for the court to make a new contract, however reasonable, if the parties have not made it themselves. It is to be interpreted in such a way that its terms may not be varied. The contract has to be interpreted without any outside aid. The terms of the contract have to be construed strictly without altering the nature of the contract, as it may affect the interest of either of the parties adversely*."

6.10. The CUF band specified in the tender issued by Respondent TANGEDCO determines the tariff fixation and the overall structure and design of the plant to maintain optimal efficiency throughout the 25-year term of the PPA. When the agreement period is for 25 years from the date of Commercial Operation of the Petitioner's Solar Power

Plant, the Petitioner must comply with the CUF requirement for every complete year, for 25 years.

6.11. CUF is a vital parameter representing the ratio of the actual electricity output from the plant to the maximum possible output during the year. Determining the estimated output of a solar power plant involves considering various factors such as the location, technology, weather, angle of incidence, season, cloud cover, various technical losses, degradation of modules, etc. Due to these variables constantly changing throughout the year, the CUF can vary significantly. The calculating the CUF penalty for the period from 24.09.2019 to 31.03.2020, particularly for a solar power plant without considering the benefit of the summer months, is wholly untenable.

6.12. Solar power generation typically peaks during the summer months due to longer daylight hours and increased solar irradiance, which significantly increases the plant's CUF. Conversely, during the monsoon months, solar power generation is reduced due to increased cloud cover and rainfall. Therefore, assessing the CUF for a period that excludes the summer months and predominantly includes the monsoon period results in an inaccurate and unfair evaluation of the Petitioner’s plant's performance.

6.13. In the case of the Petitioner, since commissioning occurred during the monsoon period, the Petitioner’s plant cannot be expected to cover up for the summer months, which was never experienced in the first year. The Petitioner cannot be held liable to

comply with such onerous CUF obligations when the assessment period does not reflect the plant's true operational potential.

6.14. TANGEDCO has calculated the Petitioner's CUF from 24.09.2019 to 31.03.2020 and imposed the same annual CUF requirement, which is unreasonable. The contract specifies calculation of CUF on an annual basis, and when the first year of operation is a broken year, CUF penalties cannot be levied on a part-year basis.

6.15. In the present PPA, when there is no language specifying pro-rata calculations, TANGEDCO cannot impose penalties based on part-year calculations. In this context, If it is a broken period at the beginning and end of the 25-year term, it should be excluded from CUF considerations. The CUF and penalty are conditioned upon a yearly CUF. There is no method provided for calculating CUF penalties on a part-year basis. Further, even according to the RPO Regulations, the CERC Renewable Energy Generation Regulations, and the Electricity Rules, a year or annual basis is determined based on the financial year. Therefore, in the present case, the calculation of CUF should be based on the financial year, commencing from 01.04.2020. Even calculating a full year from the Commercial Operation Date i.e. from 24.09.2019 to 23.10.2010 is untenable as the invoices are raised on a monthly basis, and there is no available data to calculate the CUF from the date of commercial operation of the Petitioner's plant. When no alternate method is provided, and the penalty is conditional upon a yearly CUF, a part-year

calculation is in contravention of PPA terms, especially in the context of RE generators where generation is dependent on seasonal variations, is not tenable.

6.16. The assessment must account for seasonal variations in solar power generation, ensuring a fair and accurate calculation of the CUF. In this context, it is prayed that the deduction of CUF penalties for the partial FY 2019-2020, amounting to Rs. 11,37,45,600/- for Narbheram Solar and Rs. 10,26,00,000/- for NVR Energy, is in contravention of the terms of the PPA and ought to be set aside.

B. The Petitioner's failure to meet its CUF obligation was mainly due to frequent peak-hour curtailments by the Respondents from September 2019 to January 2021. The Respondents cannot unjustly benefit from their actions that prevented the Petitioner from operating within the prescribed CUF band.

6.17. The Respondents have failed to consider that the Petitioner's inability to meet its CUF obligation was primarily due to regular and frequent curtailment instructions issued by the Respondents themselves, during the period from September 2019 to January 2021. These curtailments directly and indirectly impacted generation, as restarting after each curtailment required time to reach the desired generation level. Further, curtailment during the peak hours results in a much higher generation loss compared to a similar curtailment outside of this period. The curtailment remains at a fixed percentage, but as the generation capacity increases, the absolute amount of curtailed power also increases, leading to more significant losses during times of higher production.

6.18. The 3rd Respondent has extracted the details of the backdown instructions issued along with its reasons, viz., heavy rains, holidays, COVID impact as well as avoidance of DSM penalty, during the period from July 2019 to March 2022 in the typed set. A perusal of the extracted curtailment instructions and the duration, itself supports the Petitioner's case that, so far as the State of Tamil Nadu is concerned, a large number of curtailment instructions are issued, and if such curtailment instructions are to be strictly adhered to, it would be impossible to consistently operate within the prescribed CUF. the Respondents cannot be permitted to take unjust advantage of its own actions.

6.19. The mutual obligations require both parties perform their respective duties. The Respondents cannot insist on performance from the Petitioner when the Petitioner's failure to meet their CUF obligation has primarily resulted from the Respondent's indiscriminate issuance of curtailment instructions. Reliance is placed on the decision of the Hon'ble Supreme Court in *Sikkim Subba Associates vs State of Sikkim,* 2001 (5) SCC 62, wherein it was held as follows:

> "*Conclusions directly contrary to the indisputable facts placed on record are shown to have been drawn on the question of alleged waiver throwing over board the well-settled norms and criteria to be satisfied and proved before the plea of waiver, can ever be countenanced leave alone, the basic and fundamental principle that a violator of reciprocal promises cannot be crowned with a prize for his defaults.*
>
> *…*
>
> *The agreement between parties in this case is such that its fulfilment depends upon the mutual performance of reciprocal promises constituting the consideration for one*

another and the reciprocity envisaged and engrafted is such that one party who fails to perform his own reciprocal promise cannot assert a claim for performance of the other party and go to the extent of claiming even damages for non-performance by the other party. He who seeks equity must do equity and when the condonation or acceptance of belated performance was conditional upon the future good conduct and adherence to the promises of the defaulter, the so-called waiver cannot be considered to be forever and complete in itself so as to deprive the State, in this case, of its power to legitimately repudiate and refuse to perform its part on the admitted fact that the default of the appellants continued till even the passing of the Award in this case.."

C. When the SLDC has cited reasons such as heavy rain and COVID for issuing curtailment instructions and has admitted to the adverse impact of these factors, it is unreasonable to ignore their impact on the operation of the Petitioner's plant.

6.20. In several instances, in the reasons for curtailment, out of the 140 spells/instances of load curtailment instructions issued by the SLDC during FY 2020-21 & 2021-22, many spells/instances have been classified under the reasons, *"to avoid DSM penalty"*, "*Demand was less due to full lockdown (Covid-19)"*, and "*Rain in Trichy, Thanjavur area*". These reasons extend beyond the permissible justification of Grid Security for issuing backdown instructions.

6.21. By virtue of the Draft TNERC (Forecasting, Scheduling, And Deviation Settlement and Related Matters for Wind and Solar Generation) Regulations, 2023, regulatory affirmation has been accorded by the TNERC to revenue loss caused by backdown instructions issued for commercial reasons, at full tariff. Further, the Regulations provide that not only will there be no penalty, but there will be deemed generation benefit.

6.22. The Petitioner Companies have suffered undue injustice not only in terms of revenue loss but also due to the penalties imposed for failing to achieve the minimum 17% CUF under the PPA for reasons that extend beyond Grid Security. Extract of such reasons is provided below:

> "*Due to continuous Under Drawal for more than 10 time blocks and sign change over due. Therefore in order to carry out sign change and avoid DSM penalty, the solar block was carried out as a last resort after backing down of all possible sources. RE generation at the time of block: Solar = 2161 MW, Wind = 3200 MW. Wind Backdown = Nil*."
>
> *"High frequency & continuous high under drawal due to less demand. Hence, inevitable backdown of solar generation. Demand was less due to full lockdown (Covid-19). The solar block was carried out as a last resort after backing down of all possible sources. RE generation at the time of block: Solar = 888 MW."*
>
> *"High Frequency & Continuous huge under drawal RE generation at the time of block wind 2340 MV, Solar. 1510 MW and also wind back down around 600. MW. 2301 The solar block was carried out as a last resort after backing down of all possible sources CGS Surender up to TALCHER Stage-2). Rain in Trichy, Thanjavur area."*

6.23. On several occasions, the Respondents have stated that backing down solar blocks has been used as a last resort, only after all other possible resources have been curtailed. However, the above-extracted excerpt shows that even when wind generation exceeded solar generation, only solar generation was curtailed, while wind curtailment remained nil. In fact, there is not a single instance of wind curtailment in the entire set of curtailment instructions issued and attached by the Respondents, as seen in the common counter.

6.24. The SLDC in its counter affidavit has admitted to issuing frequent and multiple curtailment instructions during Sep'2019 till Jan'2021, for reasons such as heavy under drawal, low demand, excess generation, frequency variation, high frequency, heavy rainfall, etc. There are several instances of mismatch in the actual number of occurrences and duration of such curtailments. In this regard, reliance is placed on documents of the Petitioner's Rejoinder which highlights the mismatch and annexes the supporting emails for curtailment instructions received from Respondents.

6.25. When the SLDC has cited reasons such as heavy rain and COVID for issuing curtailment instructions and has admitted to the adverse impact of these factors, it is unreasonable to ignore their impact on the operation of the Petitioner's plant. The SLDC cannot selectively acknowledge the effect of these conditions for its own operations while denying the Petitioners the same consideration. Granting consideration to the SLDC for these factors, while not extending similar benefits to the generator and, penalizing the generator for the same conditions that have equally affected both parties, would be untenable. Both the SLDC and the Petitioner's plant are equally affected by these uncontrollable external conditions. Consequently, the Petitioner cannot be precluded from seeking relaxation of CUF obligation on such grounds.

D. Adverse impact of COVID, heavy monsoons, irradiation losses, and the Respondent's curtailment instructions has caused a substantial revenue shortfall from the Load Flow Study projections, crucial for project investment. Imposing a CUF

penalty on top of this has placed the Petitioner in double jeopardy, resulting in significant loss of interest, and affecting its debt-servicing obligations.

6.26. The operation and maintenance of the Petitioner's Solar Generation Plant was heavily impacted due to COVID during the period March 2020 till October 2020, as the Petitioner was entirely dependent on the contractor's workers and was unable to source local workers, with the plant being under warranty. During this period the petitioner faced several challenges in view of COVID including mobilising contractor's workers due to inter-state travel restrictions, mandatory quarantine norms, lack of public transportations, health and safety restrictions at workplace due to pandemic etc. This affected power generation particularly during the peak months for solar energy production i.e. during the months of March to October 2020.

6.27. The MNRE vide its Office Memorandum No. 283/18/2020 dated 20.03.2020 has expressly advised to treat the disruption of the supply chain due to the spread of coronavirus as Force Majeure. Further, the MNRE vide its Office Memorandum No. 283/18/2020 dated 13.08.2020 has also given a blanket time extension to various stakeholders for the period of 25.03.2020 to 24.08.2020 on account of this Force Majeure event and accordingly advised the State Renewable Energy Departments to provide appropriate relaxations under the PPA, on account of the same.

6.28. During the impacted period particularly between October 2019 till January 2020, the entire region where the Petitioner's plant is situated was affected by heavy monsoon and resultant flooding which affected generation on one hand and impeded accessibility to various parts of the plant for carrying out maintenance activity, including *inter alia* removing high vegetation growth, cleaning of modules etc.

6.29. Further, the Petitioner has, in its petition relied on the global data, which reflects loss in solar irradiation during the impacted period which has again impacted the generation.

6.30. The generation loss during the impacted period being neither attributable to nor under control of the Petitioner, and having caused the loss of revenue to the petitioner, the imposition of CUF penalty thereon would put the petitioner in double jeopardy.

6.31. The Petitioners have invested in the solar project on the basis of the load flow study carried out by the Respondents in November 2017 and accordingly granted the bay allotment permission at 110 KV for evacuation of power at Thenampatty Sub-station. Load flow study analyses the flow of electric power within an electrical system. The primary goal of the load flow study is to determine power flow, current, voltage, real power and reactive power under various load conditions. The study assesses various conditions and is essential for system operation, improvement and future expansion. Load flow studies consider demand, supply, grid stability, load and frequency deviations, voltage instability, contingency events and renewable integration to ensure reliable and

secure power transmission. The Petitioner relied on the load flow study conducted by Respondents, for designing and developing the project at an investment to the tune of INR 850-900 Cr. For the period from October 2019 to March 2021, The Petitioners were anticipating cumulative revenue of approximately INR 164 crores for Narbheram Solar and NVR Energy. However, the Petitioners faced a significant shortfall, generating only INR 101 crores, resulting in a revenue deficit of approximately INR 63 crores. From this revenue, an additional INR 25.05 crores was deducted towards CUF penalties. By deducting such penalties, the Respondents have withheld INR 25.05 Crores from the Petitioner since FY 2019-20 and 2020-21. As a result, the Petitioner has already suffered significant loss of interest, which in turn has impacted its debt-servicing obligations and pushed it into a state of financial distress.

6.32. In *TANGEDCO v. PPN Power Generation Co. Ltd.* 2014 (11) SCC 53, the Hon'ble Supreme Court has enunciated the rationale behind interest in the following manner:

> *55…"……The essence of interest in the opinion of Lord Wright, in Riches v. Westminster Bank Ltd.All ER at p. 472 is that it is a payment which becomes due because the creditor has not had his money at the due date. It may be regarded either as representing the profit he might have made if he had had the use of the money, or, conversely, the loss he suffered because he had not that use. The general idea is that he is entitled to compensation for the deprivation; the money due to the creditor was not paid, or, in other words, was withheld from him by the debtor after the time when payment should have been made, in breach of his legal rights, and interest was a compensation whether the compensation was liquidated under an agreement or statute. A Division Bench of the High Court of Punjab speaking through Tek Chand, J. in CIT v. Dr Sham Lal Narula thus articulated the concept of interest the words 'interest' and 'compensation' are sometimes used interchangeably*

and on other occasions they have distinct connotation. 'Interest' in general terms is the return or compensation for the use or retention by one person of a sum of money belonging to or owed to another. In its narrow sense, 'interest' is understood to mean the amount which one has contracted to pay for use of borrowed money. … In whatever category 'interest' in a particular case may be put, it is a consideration paid either for the use of money or for forbearance in demanding it, after it has fallen due, and thus, it is a charge for the use or forbearance of money. In this sense, it is a compensation allowed by law or fixed by parties, or permitted by custom or usage, for use of money, belonging to another, or for the delay in paying money after it has become payable."

56. Similar observations have been made by this Court in Indian Council of Enviro-Legal Action vs. Union of India & Ors. [20] wherein it has been held as follows:

"178. To do complete justice, prevent wrongs, remove incentive for wrongdoing or delay, and to implement in practical terms the concepts of time value of money, restitution and unjust enrichment noted above—or to simply levelise—a convenient approach is calculating interest."

6.33. A party withholding money legitimately due to the other party must compensate such other party by making payment of interest. The liability to pay interest is not just a contractual provision but also an equitable right of the person deprived of the use of the money legitimately due to him. TANGEDCO's unilateral deduction of the penalty, without providing any basis for such deductions is wholly impermissible, and the Petitioners ought be awarded interest for the sums unlawfully withheld at 12% from the due date of payment till the date of payment.

E. When, as per the PPA, the CUF penalty is conditioned upon RPO compliance and the penalty levied is to be commensurate with the prevailing forbearance price fixed by the CERC for the actual shortfall in terms of units, no CUF penalty can be levied if

the DISCOM has been RPO compliant, and there is no proof of purchase of Renewable Energy Certificates (RECs).

6.34 In principle, the CUF penalty could not have been imposed on the Petitioners as such penalty is intended to make good the loss the DISCOM will suffer due to RPO non-compliance.

6.35. In this regard, reliance is placed on Clause 6 of the PPA, which expressly states that, "*In case the availability is less than the minimum CUF specified i.e.17%, the SPG shall pay Distribution Licensee for the actual shortfall in terms of units at the prevailing forbearance price fixed by the CERC, since the Distribution Licensee is an obligated entity to utilize solar power as per Hon'ble TNERC'S RPO Regulation*."

6.36. It is evident from the CUF penalty clause set out above, is in effect an indemnity clause whereby since the said clause in the PPA is for achieving RPO compliance, if the licensee suffers shortfall and has to procure certificates to achieve compliance, it has to be compensated. Thus, it is only a recompense for the loss that is suffered. However, TANGEDCO's compliance with RPO and lack of renewable energy certificate procurement costs render the justification for such CUF penalties unlawful.

6.37. The penalties are meant to be corrective, not revenue generating. It is an admitted position that the Respondents have not paid any penalties for RPO non-compliance and therefore cannot impose such penalties on the RE generator. The same

is evident from the true-up petitions and ARR Reports filed by TANGEDCO for the disputed period. When the state is RE compliant and has met its RPO obligations, it is unjust to impose a penalty on the RE generator.

6.38. Further, there is no proof that the Respondents have purchased Renewable Energy Certificates (RECs) to cover any shortfall, indicating that all compliance has been achieved through state power. The Respondents cannot seek to unjustly enrich themselves by imposing penalties on the Petitioners as the grid requirements have not caused any loss to the Respondents.

6.39. A penal clause must be interpreted in its strict sense. It is a well-settled rule of construction that penalty provisions must be construed beneficially, favouring an interpretation that exempts the subject from the penalty rather than one that imposes it. In this regard, reliance is placed on *Tolaram Relumal v. State of Bombay*, AIR 1954 SC 496, *Virtual Soft Systems v. CIT,* (2007) 9 SCC 665, *Abhiram Singh v. C D Commachen* (2017) 2 SCC 629, *Excel Crop Care Ltd v. CCI* (2017) 8 SCC 47.

6.40. In consideration of the grounds stated above, no penalty can be levied for FY 2019-20 (part year). For FY 2020-2021, Rs. 7.52 Crore of penalty is directly attributable to the admitted curtailment instructions issued by the Respondents, and Rs. 1.33 Crore is attributable to other factors including irradiation, heavy monsoon and COVID. Thus, even where no allowances are made for the impact of COVID, monsoons, or irradiation, the CUF penalty that can be levied on the Petitioners cannot exceed Rs. 1.33 Crore.

F. The Petitioners have met the CUF bandwidth from FY 2021-22 onwards, indicating that the project was properly structured and barring the influence of adverse external factors beyond the Petitioner's control, the plant operated within the prescribed CUF band once conditions stabilized.

6.41. The Petitioner has been able to meet the CUF bandwidth from FY 2021-22 onwards, despite the issuance of curtailment/backing down instructions by the Respondent, when the impact caused by the above adverse external factors such as pandemic, heavy monsoon and irradiation had drastically reduced. In this context, the there is an urgent regulatory requirement to review the imposition of CUF Penalty in accordance with the terms of the PPA. The petitioner ought not be doubly penalised and the imposition of CUF penalty for 2019-20 and 2020-21 totalling Rs. 25.05 crores ought to be dismissed as being unlawful.

6.42. The calculations submitted by the 2nd Respondent are not maintainable under the terms of Power Purchase Agreement and also in fact or in law. The CUF penalty imposed by the 2nd Respondent lacks justification and a clear basis. This is further evidenced by the 2nd Respondent's continued and indiscriminate change in the basis/methodology of computing the CUF penalty levied on the Petitioner. In view of the above, there is no liability to pay the CUF penalty as imposed by the 2nd Respondent on the Petitioners.

7. Common Rejoinder filed by petitioner :-

7.1. The Respondent has failed to provide any scientific basis for fixing a vital parameter like the CUF band and the only rationale sought to be relied upon by the Respondent TANGEDCO is an extract of Clause 5.2.1. of the MNRE Guidelines, which merely states that the generator is liable for penal charges for supply of energy less than the minimum committed CUF. The said Guidelines do not specify the CUF band within such a narrow range between 17-19%, which further justifies the Petitioner's position for a review of such stipulation.

7.2. The Respondent's denial of the applicability of the Force Majeure clause to solar plant generation units is wholly erroneous. The PPA between the parties dated 26.09.2017, expressly states that Acts of natural phenomena will be treated as a Force Majeure.

7.3. The MNRE vide its Office Memorandum No. 283/18/2020 dated 20.03.2020 has expressly advised to treat the disruption of the supply chain due to the spread of coronavirus as Force Majeure. Further, the MNRE vide its Office Memorandum No. 283/18/2020 dated 13.08.2020 has also given a blanket time extension to various stakeholders for the period of 25.03.2020 to 24.08.2020 on account of this Force Majeure event and accordingly advised the State Renewable Energy Departments to provide appropriate relaxations under the PPA, on account of the same.

7.4. In light of this, it is quite surprising that the Respondent/TANGEDCO would allege that the Petitioner seeks to unilaterally modify agreed-upon terms in the PPA, when, in reality, the Respondent is the one who is attempting to do so by blatantly overlooking express clauses of the PPA. In fact, the Petitioner repeatedly sought to bring the effect of the factors entirely beyond the control of the Petitioner, to the notice of the Respondent TANGEDCO vide letters dated 01.12.2020, 03.06.2021, 04.08.2021, and 18.01.2022, by informing the 2nd Respondent of the hurdles faced by the Petitioner in achieving the minimum CUF. However, no response was received from the 2nd Respondent thereby constraining the Petitioner to prefer the present petition as it has already suffered a loss of revenue to the extent of the difference between the actual and possible generation and has been doubly impacted by imposition of CUF penalty for the difference between actual generation and generation at 17% CUF.

7.5. The petitioner denies any admission of the Respondent / TANGEDCO furnishing a Letter of Credit, as per the terms of the PPA and order of the Commission dated 05.04.2022 passed in DRP 9 of 2021.

7.6. The Respondent/TANGEDCO in its subsequent tenders removed the condition for imposing penalty in case the generation falls below the minimum prescribed CUF level as below:

"9.0) Capacity Utilization Factor (CUF):

a) TANGEDCO, in any Contract Year shall not be obliged to purchase any additional energy from the RPG beyond the contract capacity. For the first year of operation, the above limits shall be considered on pro-rata basis. There shall be no penalty to RPG for short fall in solar power generation from minimum prescribed CUF."

7.7. Further, the Respondent / TANGEDCO vide its order dated 22.10.2021 itself increased the CUF limit to 21% which reads as below:

"The feed-in price has been determined with 21% CUF taking into account of the AC output capacity and corresponding capital cost. Addition of capacity of DC panels is left to the option of eligible consumer / prosumer / generator to the extent of the sanctioned GISS plant capacity (AC output capacity) which will be reckoned by the AC output demand reached and recorded in the Gross Generation meter for the given billing cycle."

7.8. Introduction of the above two conditions in its subsequent tenders/PPAs demonstrates that the Respondent/TANGEDCO has itself realised the practical difficulty and demerits of fixing a narrow CUF band which is extremely critical in designing and operating a solar power plant. Such an exercise consists of several variables, and despite the best knowledge of seasoned solar developers, the conditions affecting the CUF over the life of the plants can vary widely and can sometimes be beyond the control of the operator. Increasing the upper band to 21% and removing the penalty for

falling below the lower band gives a much wider flexibility to the Generators in designing and operating the plants without impacting the revenue losses.

7.9. The Petitioners reiterate that the present case is not one where they are seeking compensation for losses due to issuance of back down instructions, and in respect thereof, reserves its right to file a separate petition for claims arising thereunder. The Petition is essentially only seeking regulatory intervention, so far as the practical impossibility of compliance with the CUF band is concerned. In this regard, the Petitioner is merely highlighting the oversight of another critical variable by the Respondent/ TANGEDCO for necessitating a review of the prescribed CUF band, viz., the frequent and indiscriminate issuance of back down instructions.

7.10. The Petitioner has undertaken a comprehensive and meticulous exercise in scrutinising the load curtailment instructions issued by the 3rd Respondent and corroborating the same with its records. The Petitioner has also analysed the total impact of load curtailment issued by the 3rd Respondent, in percentage terms, to demonstrate the practical impossibility of operating the Petitioner's plant within an extremely narrow CUF band.

7.11. Upon cross-referencing the records submitted by the 3rd Respondent with the corresponding load curtailment instructions received by the Petitioner Companies, the following instances of discrepancies arise:

Types of discrepancies	No. of instances	Time Duration (in Hrs, Min)
Instances wherein no load curtailment instructions have been recorded/furnished by the 3rd Respondent but load curtailment instructions have been received by the Petitioner Companies.	9	22 Hrs 17 Min
Instances wherein the time of commencement of load curtailment as mentioned by the 3rd Respondent is much later than what has been instructed to the Petitioner Companies.	19	58 Hrs 30 Min
Total instances	28	80 Hrs 47 Min

7.12. In the reasons for curtailment, as extracted in the 3rd Respondent's typed set of papers, many spells/instances have been classified under the reason, *"to avoid DSM penalty"*, which is purely commercial in nature. It is therefore evident that a substantial quantity of the actual load curtailment was much higher than what has been recorded and presented by the 3rd Respondent and the Petitioner Companies have been put to undue injustice not only in terms of the loss in revenue but additionally, on account of the penalty imposed due to failure to achieve the minimum 17% CUF under the PPA for reasons which extend beyond Grid Security.

7.13. For the purposes of the present analysis, the Petitioner has considered the exclusive impact of curtailment instructions on its CUF and summarised the corrected

possible CUF, after corroborating it with the curtailment instructions provided by the 3rd Respondent and considering other relevant factors, as follows:

NVR ENERGY

Financial Year	Actual Generation (Kwh)	**Actual CUF**	**Considering only Curtailment impact**		**Considering Curtailment+Irradiation Loss+Heavy Monsoon & COVID restrictions impact**			
			Loss in Generation	**Possible CUF**	Loss in Generation	Loss in Generation - **Corrected**	**Possible CUF - As per Original Petition**	**Possible CUF - Corrected**
2019-20	3,45,73,117	**7.87 %**	16,52,486	**8.25%**	4,19,02,520	5,01,96,064	**17.41%**	**19.30%**
2020-21	11,96,85,700	**13.66 %**	2,99,84,429	**17.09%**	3,69,48,478	5,80,54,046	**17.88%**	**20.29%**

NSTN

Financial Year	Actual Generation (Kwh)	**Actual CUF**	**Considering only Curtailment impact**		**Considering Curtailment+Irradiation Loss+Heavy Monsoon & COVID restrictions impact**			
			Loss in Generation	**Possible CUF**	Loss in Generation	Loss in Generation - **Corrected**	**Possible CUF - As per Original**	**Possible CUF - Corrected**

							Petition	
2019-20	2,98,27,200	**6.79%**	17,11,987	**7.18%**	4,64,26,912	4,98,50,359	**17.36%**	**18.14%**
2020-21	11,25,19,007	**12.84%**	2,58,05,949	**15.79%**	5,31,84,756	7,16,34,214	**18.92%**	**21.02%**

7.14. It is imperative to consider the impact of load curtailment instructions on CUF in the context of the Solar Load Profile. The indiscriminate issuance of curtailment instructions, particularly during peak hours identified through the solar load profile, not only disrupts operations precisely when sunlight and weather conditions are conducive to peak electricity generation, but also results in a much higher generation loss compared to a similar curtailment outside of this period and reduces the overall efficiency and potential CUF of the facility, as the plant is repeatedly forced to operate below its maximum capacity.

7.15. The curtailment during the peak hours results in a much higher generation loss compared to a similar curtailment outside of this period. The curtailment remains a fixed percentage, but as the generation capacity increases, the absolute amount of curtailed power also increases, leading to more significant losses during times of higher production.

7.16. The computation of generation loss is intricate and subjected to lots of complex integral algorithms as the rate of change of generation profile happens rapidly (either steep rise time or steep fall time) and hence cannot be easily linearly co-related.

7.17. Curtailment during peak hours from 12:00 PM to 2:00 PM results in the highest total loss (80 MW), establishing that reducing generation during the period of highest capacity has a more significant impact. Although grid non availability was considered by the developers while designing the plant and the revenue stream, the issuance of frequent back down orders during various hours of the day, was not considered as this is an entirely different phenomenon compared to complete non availability of the grid and cannot be treated as grid non availability, as observed in the APTEL's order dated 02.08.2021.

7.18. There is an urgent regulatory requirement to review the CUF band in order to bring it in compliance with the actual operational position. When the petitioner has already suffered a substantial loss of revenue to the extent of the difference between actual generation and possible generation due to the 3rd Respondent's indiscriminate issuance of backdown instructions, it cannot be doubly penalised by imposition of CUF penalty for the difference in units between actual generation and generation at 17% CUF, especially when it is evident that excluding factors such as irradiation, curtailment, heavy monsoon and COVID restrictions, from consideration would substantially increase the CUF, that the Petitioner could maintain.

8. Findings of the Commission :-

8.1 The prayers of the petitioner in D.R.P. No.13 of 2023 and D.R.P. No.12 of 2023 are similar in nature and facts and circumstances are also identical and hence both cases are tagged and dealt together as below:

We heard the arguments of both sides and examined the documents and data filed by parties.

8.2. The similar prayers of the petitioners in both cases are:

a) to exercise regulatory power and review the working and applicability of clause 6 of the power Purchase Agreement dated 26.09.2017 with regard to Capacity Utilisation Factor (CUF)

b) to restrain respondents from issuing backing down / curtailment for any reason other than grid safety and security and comply with the Must Run status granted to solar power plants.

c) to direct the respondents to refund the amount of Rs.11,53,11,360/- and Rs.13,51,82,821/- deducted respectively from M/s. NVR Energy Private Limited (D.R.P. No. 13 of 2023) and from M/s. Narbheram Solar TN Private Limited, (D.R.P. No. 12 of 2023) towards CUF penalty for the FY 2019 – 2020 and FY 2020-2021.

d) to award cost of the instant petition including court fees and legal expenses and make payment of the said sum to the petitioner.

8.2.1. The respondents viz TANGEDCO and the SLDC have countered the contention of the petitioners on the following grounds:

a) Having set up the project with its commercial operation from 24.09.2019, agreed and executed the PPA, the petitioner has filed the petition to revise CUF band specified in the agreement; The commitment to maintain the percentage of CUF band had already been agreed by the petitioner and signed in the bilateral agreement and hence the PPA mutually agreed and executed cannot be modified;

b) The reasons stated by the petitioners for poor performance of their plants are not entitled to be covered under Force majeure condition.

c) The respondent SLDC while refuting the claim of the petitioner that curtailment was imposed on their plants for reasons other than grid security , have submitted data in defence of their justification that curtailment were made for the reasons of grid security only.

8.3. During the course of hearing, when all pleadings were completed and the case was posted for oral arguments, the respondents filed an additional typed set containing a working sheet for a revised sum of penalty claimed as payable by the petitioner to a quantum of Rs.3.91 Crores and Rs. 2.69 Crores from M/s. Narbheram Solar TN Private Limited and NVR energy respectively, on account of change in the forbearance price, in connection with the CUF penalty for the periods 2019-20 and 2020-21.

8.3.1 The petitioners taking exception to the above, submitted that the revised calculation of the respondent is not accounted with respect to the forbearance price on a

time-weighted average basis, but accounted on monthly basis, resulting in further deduction of 6 Cr in addition to the 25.05 Cr already deducted by the respondent. The petitioners would contend that such a basis of calculation is incorrect, untenable and contrary to PPA terms.

8.4. After careful consideration of the contentions of the parties, we have framed the following questions for consideration:

(1). Is the prayer of the petitioner to modify the PPA terms in regard to the revision of narrow band on Capacity Utilisation Factor tenable?

(2) If the answer to the first question is in affirmative , whether the regulatory power of the Commission could be exercised to alter the PPA terms to suit the requirement of the petitioner?

(3) If the answer to the first question is in the negative, whether the reasons projected by the petitioners are entitled to be considered to review effectively and re-calculate the already achieved CUF of the petitioner without altering the PPA terms?

(4) If the answer to the question 3 is in affirmative under what basis and what extent the CUF could be revised?

8.5. The first issue is regarding consideration of petitioners' plea to revise the CUF on account of the following factors of permanent nature among others:

a. Design parameters of their plant

b. Variation of irradiation.

c. Level of degradation

8.5.1. We shall first examine the relevant term of the bilateral PPA dated 26.09.2017 entered between the parties:

"6. Capacity Utilisation Factor (CUF)

The Capacity Utilisation Factor (CUF) shall be 17% to 19%, calculated on yearly basis. In case the availability is more than the maximum CUF specified, i.e., 19%, the Distribution Licensee will purchase the excess generation, at Average Pooled Purchase Cost (APPC) or the PPA tariff or the applicable preferential tariff, whichever is less. In case the availability is less than the minimum CUF specified i.e., 17%, the SPG shall pay Distribution Licensee for the actual shortfall in terms of units at the prevailing forbearance price fixed by the CERC, since the Distribution Licensee is an obligated entity to utilize solar power as per Hon'ble TNERC's RPO Regulation."

A plain reading of the above clause specifies without ambiguity the following:

(i) The CUF band to be maintained

(ii) Tariff payable by the Licensee in case of higher CUF above the specified band

(iii) Penalty payable by the generator in case of lower CUF below the specified band.

8.5.2. The senior counsel appearing for the respondents vehemently opposing the prayer of the petitioner, contended that that the rights and obligation of the parties flow from the terms and conditions of the PPA and contract entered between the petitioners and the Licensees with clear understanding of the terms and conditions of PPA in mutual agreement cannot be altered. He further asserted with citation of Supreme Court orders, that the regulatory powers of the Commission cannot be invoked to alter or modify the PPA terms to the advantage of one party at the expense of the other.

8.5.3. Before furthering the discussion on the question of exercising the regulatory power, we are inclined to address an ancillary question that claims preference over the question of exercising regulatory powers:

" Whether modification of PPA term viz modification of the specified CUF band, as pleaded by the petitioner is technically warranted ?"

8.5.4. To seek the answer to the above question, let us look in to the influencing factors of the CUF reasoned by the petitioners. The petitioners have elaborated their plant design, level and rate of irradiation and degradation, comparison of CUF band in other States etc in order to justify their pleading to reduce the CUF band from the level specified in the PPA. It is to be understood that the specified CUF band of 17 to 19% and the minimum limit of 17% had been fixed only after taking into consideration of all technical factors and geographical parameters in wider amplitude including the factors reasoned by the petitioners. The CUF band specified had been well analysed, determined, specified, mutually agreed and signed. It is not impractical to achieve the specified CUF band. We cannot lose sight of the admitted fact that with the same factors reasoned by petitioners, the petitioners themselves were able to achieve the committed CUF from FY 2021-22 onwards. In fact, with the growing technology and liberty of installing the quantum of DC panel capacity to the requirement of developers' need, the CUF was later enhanced to 21% from the year of 2021in the Commission's GISS Regulation 2021.

8.5.5 In the instant case, the PPA terms have not restricted the petitioner to limit the installed capacity of the DC modules of their plants. In fact, the PPA defines the installed capacity as the AC output, but not the DC module capacity in clause 1(g) of the PPA as below:

> *" Installed capacity or IC means the AC output in MW of all the units of the solar power generators or the total capacity of the solar generating station (reckoned at the generator terminals) as declared by the generator and agreed by the distribution Licensee."*

Reading the clause make it clear that the capacity limit of the Plant is reckoned as the output AC capacity but not the input capacity of DC modules which is left to the petitioners. Thus the PPA terms facilitate in clear terms to install the required DC module capacity to the requirement to meet the committed Capacity Utilisation Factor.

8.5.6 Added to this, it is relevant at this point of discussion to refer the advisory / clarification issued by the MNRE dated 05.11.2019 :

"F.No.283/63/2019-Grid solar
Government of India
Ministry of New & Renewable Energy
Grid solar Power Division
Dated 5th November,2019

ADVISORY/CLARIFICATION

Sub: Advisory/Clarification w.r.t. D.C. Capacity of Solar PV Power Plants

(1). MNRE has received representations from various Solar Developers/Solar Developer Associations that recently few States have raised questions and concerns around globally adopted practice of installing additional DC capacity, over and above the nameplate/ contracted AC capacity, with the objective of meeting the committed

Capacity Utilisation Factor (CUF) in Power Purchase Agreements (PPAs) / Power Supply Agreements (PSAs).

(2). It has further been stated that the State Governments feel that installation of such additional capacity serves as a medium for additional revenue generation for the developers and that such additional DC capacity cannot be allowed.

(3). The issue has been examined in the Ministry of New & Renewable Energy (MNRE), and it is noted that:

i. *As per the present bidding practice, the procurer, whether State Government Agencies/ DISCOMS or Central Government entities like SECI/ NTPC, invite bids from solar power developers for setting up solar PV power plant of a certain capacity (MW). The capacity won by the successful bidder (solar PV power developer), on signing of Power Purchase Agreement (PPA) becomes the "Contracted Capacity", which is the capacity (MW) in AC terms, allocated for supply by that bidder.*

ii. *Along with 'Contracted Capacity', the PPA also provides for a range of energy supply based on Capacity Utilisation Factor (CUF). While the procurer is not obligated to buy energy beyond this range, the developer is liable for penal charges for supply of energy less than the minimum committed energy or minimum committed Capacity Utilisation Factor (CUF).*

iii. *Thus, the PPAs define the relationship between the Solar Developers and the procurer in terms of AC capacity, and range of energy supply based on CUF, with procurement obligation within this range.*

iv. *The requirement of designing and installation of additional DC panels may emanate from the contractual need to supply the committed energy and does not cast any obligation on the procurer to buy generation in excess of the contracted energy range.*

v. *The procurer, without getting into the design and installation of solar capacity on the DC side, should only ensure that the AC capacity of the solar PV power plant set up by the developer corresponds with the contracted AC capacity and that, at no point, the power (MW) scheduled from the solar PV power plant, is in excess of the contracted AC capacity.*

(4). accordingly, all concerned are hereby advised that:

i. *As long as the solar PV power plant is in accordance with the contracted AC capacity and meets the range of energy supply based on Capacity Utilisation Factor (CUF) requirements, the design and installation of solar capacity on the DC side should be left to the generator / developer.*

ii. *Even if the installed DC capacity (MWp) [expressed as the sum of the nominal DC rating (Wp) of all the individual solar PV modules installed) in a solar PV power plant, is in excess of the value of the contracted AC capacity (MW), it is not violation of PPA or PSA, as long as the AC capacity of the solar PV power plant set up by the developer corresponds with the contracted AC capacity and that, at no point, the power (MW) scheduled from the solar PV power plant is in excess of the contracted AC capacity, unless there is any specific clause in the PPA restricting such D.C. capacity.*

iii. *The contracting party is not obliged to buy any power in excess of the contracted quantum. There is provision of penalty in case the supply falls short of the contracted quantity.*

iv. *As per law, the setting up of generation capacity is an unlicensed activity and therefore any person is entitled to set up any capacity which he desires to set up, and sell power to any entity which may want to buy it.*

(5). This issues with the approval of Hon'ble Minister (Power & NRE)."

8.5.7 The above advisory of the MNRE answers the issue, still more clearly by giving solution to install required capacity of DC modules to offset the operational constraints encountered in the solar project to maintain the expected performance level of plant and to meet the contractual need and committed CUF. The advisory specified in exclusive term that

> " *Even if the installed DC capacity (MWp) [expressed as the sum of the nominal DC rating (Wp) of all the individual solar PV modules installed) in a solar PV power plant, is in excess of the value of the contracted AC capacity (MW), it is not violation of PPA or PSA, as long as the AC capacity of the solar PV power plant set up by the developer corresponds with the contracted AC capacity and that, at no point, the power (MW) scheduled from the solar PV power plant is in excess of the contracted AC capacity, unless there is any specific clause in the PPA restricting such D.C. capacity. "*

8.8. With the PPA signed on 26.09.19 and the above advisory issued on 5.10.19 and both reckoning the AC output capacity as the plant capacity, the petitioners had enough time and liberty , post commissioning of their plants to install additional DC modules to their requirement to overcome the design and operational constraints as projected by them.

8.9. As the solution is very much available to the petitioner legally and technically to meet the committed CUF and in the absence of the petitioner availing the available remedy, questioning the CUF band already specified in the agreement at this stage is not permissible . Therefore we find no necessity to take a retrograde step of tinkering the bilateral PPA terms to suit the below par performance of one party. Invoking inherent powers arises only when the circumstances warrant removal of practical difficulty. When

the workable solution is well in place to remove the difficulty to meet the agreement norms, it becomes ipso facto course of action to avail the available remedial solution by the parties rather than attempting to bend the agreement terms, otherwise.

8.10 In view of the foregoing conclusion, we find no concrete necessity to alter the bandwidth of the CUF specified in the PPA.

9. In view of our finding in the first question, the second question regarding exercising the regulatory power to review the clause 6 of the Power Purchase Agreement to revise the CUF band is also answered in the negative. In effect, the prayer of the petitioners to invoke the regulatory powers to alter the PPA terms stands declined.

10. The petitioner's plea to exercise the regulatory power of the Commission stems essentially from their requirement to reduce the CUF limits stipulated in the PPA, following their inability to meet the stipulation due to various factors projected by them. It is already concluded that among those factors, the selective factors attributable to design and geographical parameters do have remedial solutions and therefore do not merit consideration as discussed supra. However there are other category of factors advanced by the petitioners in terms of operational constraints, forcible in nature that could scuttle the solar plants from operating to their true potential. Given those impactful factors that could contribute in lowering the resultant output of the solar plants, we opine that the pleadings of petitioners in seeking consideration of such factors merits review and it would be a correct approach to ascertain the validity of such factors and if found valid, extend the analysis further to scientifically explore the scope of re-assessment of

CUF already achieved by the petitioner taking into account of such factors, rather than looking from the angle of altering the normative CUF limits.

11. Having opined as above, we now proceed to deal with the third question regarding the entitlement of the reasons projected by the petitioners to be taken in to consideration to re-assess the CUF already achieved by the petitioner.

12. The reasons attributed by the petitioner as 'impact factors' and accounted in their projected computation sheet in the documents furnished before us are:

(i) Calculation of CUF for part of the period in FY 2019-20

(ii) Curtailment loss

(iii) Irradiation loss

(iv) Covid restriction and heavy monsoon

13. The dispute relates to the CUF penalty for the years 2019-20 (24.09.2019 to 31.03.2020) and 2020-21 (01.04.2020 to 31.03.2021)

13.1 Regarding the period from 24.09.2019 to 31.03.2020 relating to the year FY 2019-20, the petitioner has contended that the PPA provides for calculation of the CUF on yearly basis and not pro-rata for part of the year and therefore the levy of CUF penalty for the period from October 2019 to March 2020 is contrary to the terms of the PPA.

13.2. It is required to refer to the definition of CUF:

“The performance of solar plant is defined by the Capacity Utilisation Factor (CUF),which is ratio of the actual electricity output from the plant to the maximum possible output during the year”

13.3.The sanctity behind the assessment of CUF on annual basis is that the performance of the solar plant depends on the irradiation rate and intensity of the solar light which is variable throughout the year. During summer it is higher, during monsoon it is lower and during the intermediate period it is moderate. The annual calculation therefore averages these variations to evaluate the average of cumulative operational potential in a given year.

Thus mathematical calculation of CUF according to the definition and the sanctity behind the definition encompass two factors:

a) Maximum possible generation during the year

b) Actual generation during the year

13.4 When the generation is available throughout the year, the maximum possible generation throughout the year and the actual generation throughout the year are to be accounted to assess the resultant CUF for the year.

13.5 When the plant is commissioned in the middle of the year and the power generation is possible for the corresponding part of the year, the maximum possible output for the that part of the year and the actual generation for that part of the year are to be accounted to assess the CUF for the same part of the year.

13.6 Such assessment is objectively correct and logically acceptable and therefore cannot be termed as unlawful in the name of pro-rata basis calculation. CUF is a parameter to evaluate plant performance. Performance factor is an essential derivative for any project for innumerable purposes for a given year. It cannot be done away or given preferential or indiscriminate treatment solely for the reason that the performance does not cover the whole year. Hence we are unable to appreciate the theory that since CUF is on annual basis, it cannot be made applicable to broken year. It is untenable argument keeping in view of the purpose and concept of CUF. Going by the engineering concept, CUF is applicable irrespective of period of duration, be it a year or month or even a day. Even for an one kilowatt roof top solar plant capable for producing a range of 4.5 - 5 units on a normal sunny day, the normative CUF band for the day is taken as 18.75 - 20% for all purposes of computation. The only criteria is that when it is assessed for broken year, such truncated duration accounted in a year should not be for 'entire summer' or 'entire monsoon' or 'entire intermediate' to upset the purpose of averaging the operational performance of the plant over all seasons of a given year and to undermine the sanctity behind the definition of CUF. It is also to be supplemented that it is not possible to evaluate a factor on annual basis if the source data is not available on annual basis. It is also not practically possible for all the plants to get commissioned at the beginning of the financial year for this sole purpose. When the data is available for part of the year it is trite practice to evaluate the factor with the available data for the corresponding period with due consideration on all factors involved in such evaluation. It

need not have been specifically stipulated in the agreement. In view of the above, we are unable to accept the argument that if the data for entire annual period is not available, the performance evolution itself should be skipped for that year.

13.7 As far the instant case is concerned we find from the data made available before us, the CUF calculation for the period from 24.09.2019 to 31.03.2020, both the factors required for the calculation CUF i.e., maximum possible generation and actual generation have been accounted only for the same period of 24.09.2019 to 31.03.2021 . If the CUF ratio were calculated taking the denominator (possible generation) on annual basis and the numerator (actual basis) for the period from October'2019 to March'2020, then it might be appropriate to be termed as unlawful. Admittedly such indiscriminate method of calculation has not been carried out by the respondents.

The period involved is also equally mixed with non-peak period (October to December) and peak period (January to March) of irradiation level.

14. In view of the above, we find no justification in the petitioner's claim that the CUF calculated for 2019-20 is wrong and unlawful.

15. Having said that, our reference is drawn to the contention of the petitioner that the commercial operation data is considered as 30 days from the actual date of commissioning of the first capacity i.e. 30 days from 24.09.2019. It is also claimed by the petitioner that the petitioner's commercial operation date of 24.10.2019 is admitted by TANGEDCO, as evident from their letter dated 01.11.2019. Further, when the projects commissioned during the period i.e. from 24.09,.2019 to 24.10.2019, the payments for

the energy is considered at only 50% of the PPA tariff until the commercial operation date. Citing these conditions which are not disputed by the respondents, the petitioner would contend that the CUF penalty does not arise until the commercial operation date.

15.1 Coming back to the definition and sanctity behind the CUF, the performance of the solar plant could be realistically evaluated to its optimum potential only when it attains a stage of commercial operation.

15.2 When the plant is in the verge of trial run with initial teething troubles and setting up the modalities for the full-fledged commercial operation, assessment of its performance by way of CUF cannot be realistic and hence imposing penalty for unrealistic CUF for the period before COD is not fair and justifiable. The measurement of utilisation factor would be realistic and meaningful only when plant capacity is fully utilised. With this observation, we find substance in the claim of the petitioner that the CUF shall be calculated only from the date of commercial operation.

15.3. In view of our forgone conclusion, the CUF for 2019-2020 shall be re-assessed only from the date of commercial operation for the respective plants of both petitioners, taking into account of the actually installed capacity of plant during such period of assessment.

16. Regarding the curtailment loss, the petitioner would contend that the forced curtailment by the SLDC (3rd respondent) other than reasons of grid security was one of the reasons for the loss of generation resulting in lower CUF and consequential penalty.

16.1 The SLDC refuting the above contention of the petitioner has furnished instant wise curtailment details for the subject period of 2019-2020 and 2020-2021. The details include the curtailment block, duration, prevailing grid frequency , quantum of under drawl from schedule, backed down quantum of conventional stations, backed down quantum of wind generation, hydro discharge, prevailing weather conditions and the comprehensive reasons for block wise curtailment , taking in to account of all relevant parameters. The scheduled generation from various sources and the tied up power from generators are also filed for the corresponding period. On meticulous scrutiny of block wise curtailments and the allied voluminous data submitted by the SLDC, we find that the curtailment of solar plants have been resorted on account of grid security only in consequence of breach of specified safe limit of grid frequency ie 50.05 Hz or breach of specified safe limit of under drawl below 250 MW or breach of both on every blocks of curtailment invariably. The weather conditions in regard to rain and load conditions such as lesser demand etc. mentioned in the SLDC submission are only supplementary information and not the sole reason for curtailment as wrongly interpreted by the petitioner. The curtailment included the wind generation as well.

16.2. Having accepted that contention and evidential documents of the SLDC that the curtailments were done for the bonafide purpose of the grid security, the ancillary questions that still remain in parallel:

(i) Whether the investigation of reason for curtailment would decide the question of entitlement of whether or not such curtailment be accounted for the purpose of assessing the CUF?

(ii) Whether the forced curtailment though done for the bonafide purpose by the Licensee would be entitled to penalise the generator for not generating during curtailment?

These are the crucial questions that need to be answered in the context of accounting the bad performing parameters for the purpose of imposing penalty. The purpose of CUF penalty is only a deterrent against poor performance of solar generator below a specified limit of performance level gauged by CUF. When the performance itself is curtailed and forcefully prevented, imposing penalty for the forced non-performance lacks rationale. May be the other kind of dispute revolving around the claim of compensation on account of generation loss dealt in other cases might warrant the analysis of whether or not the curtailment is done on grid security basis. The same consideration cannot be relevant for the nature of the case being dealt. This case calls for the review of CUF constituted by various parameters of performance of the solar plant where the duration of operation of the plant is the primary factor. As such, the duration of curtailment has to be the plain consideration, rather than the reasons behind the curtailment. When the curtailment is imposed on the generator, be it for any reasons, the generator loses generation and incurs loss. That itself makes them deprived of recovery of legitimate tariff. Imposing penalty again on the non-operation during such

forced curtailment in the name of CUF is unjustified and against the principles of natural justice.

16.3 Following extract of the order of Supreme Court in Sikkim Subba Associates Vs Sikkim, 2001 (5) SCC 629 relied by the petitioner, reinforces the above view:

" The agreement between parties in this case is such that its fulfilment depends upon the mutual performance of reciprocal promises constituting the consideration for one another and the reciprocity envisaged and engrafted is such that one party who fails to perform his own reciprocal promise cannot assert acclaim for performance of the other party and go to the extent of claiming even damages for non-performance by the other party."

16.4. In view of the above, we have no hesitation in agreeing with the petitioner's contention that the loss of generation due to curtailment should not be accounted for the purpose of computing CUF.

Having concluded as above, the methodology of re-calculating the CUF with consideration of loss of generation hours during curtailment shall be dealt in the later part of this order.

17. Regarding irradiation loss, the petitioner states that their plant is designed with solar GIS weather data base for long term irradiation data and however the actual irradiation data has been varying on a month on month basis, which has contributed to underperforming of their plant and poor CUF.

17.1. It is a well known fact that the changing irradiance level, aerosols, cloud cover etc are prominent dynamic factors of the solar plants. When a major plants of several megawatts with an operational commitment of 25 years is planned with specific

performance level, the onus on the design, operation and maintenance of the plant lies with the developer to meet such commitments besides complying with the contractual obligations.

17.2. It is again pertinent to refer to the advisory / clarification issued by the MNRE dated 05.10.2019 dealt in the earlier part of the order where the available remedy to remove difficulties has been broadly demonstrated. Thus we are not convinced with the theory of irradiation loss projected by the petitioner for the poor performance of their plants and hence unable to accept the same.

18. The petitioner claims that operation and maintenance of the petitioner's plants were impacted due to Covid-19 pandemic, the consequent lockdown, cyclone and heavy rainfall. The petitioner has further submitted that the MNRE vide its office memorandum No.283 /18/2000 dated 20.03.2000 has expressly advised to treat the disruption of the supply chain due to the spread of corona virus as Force Majeure.

18.1. The respondent has contended that Force Majeure condition is not applicable for the solar plant generation.

18.2. We would like to refer the MNRE's memorandum dated 13.08.2020

*"**OFFICE MEMORANDUM***

Sub: Time Extension in Scheduled Commissioning Date of Renewable Energy (RE) Projects considering disruption due to lockdown due to COVID-19

In supersession of this Ministry's earlier O.M.s of even no. dated 17th April, 2020 and 30th June, 2020 on the subject issue, the following is hereby conveyed:

(1). The MNRE, vide its O.M. No. 283/18/2020-GRID SOLAR dated 20.03.2020, with the approval of Hon'ble Minister, had inter-alia, issued directions to SECI, NTPC and Addl. Chief Secretaries/Pr. Secretaries / Secretaries of Power/Energy/Renewable Energy (RE) Departments of State Governments/UT Govts./Administrations, to treat delay on account of disruption of the supply chains due to spread of corona virus in China or any other country, as Force Majeure and that they may grant suitable extension of time for projects, on account of corona virus, based on evidences / documents produced by developers in support of their respective claims of such disruption of the supply chains due to spread of corona virus in China or any other country.

(2). Subsequently, RE developers had represented to this Ministry that they may be granted a general time extension on account of lock down (due to COVID-19) and additional time required for normalization after such lockdown.

(3). This issue has been examined in the Ministry and it has been decided that:

(a) All Renewable Energy (RE) implementing agencies of the Ministry of New & Renewable Energy (MNRE) will treat lockdown due to COVID-19, as Force Majeure.

(b) All RE projects under implementation as on the date of lockdown, i.e. 25th March 2020, through RE Implementing Agencies designated by the MNRE or under various schemes of the MNRE, shall be given a time extension of 5 (five) months from 25th March 2020 to 24th August 2020. This blanket extension, if invoked by the RE developers, will be given without case to case examination and no documents/evidence will be asked for such extension.

(C) The timelines for intermediate milestones of a project may also be extended within the extended time provided for commissioning.

(d) The Developers, of the projects covered under para 3(b) above, may also pass on the benefit of such time-extension, by way of granting similar time-extensions, to other stakeholders down the value chain like Engineering Procurement

Construction (EPC) contractors, material, equipment suppliers, Original Equipment Manufacturers (OEMs), etc.

(e) The State Renewable Energy Departments (including agencies under Power/ Energy Departments of States, but dealing in renewable energy) may also treat lockdown due to COVID-19, as Force Majeure and may consider granting appropriate time extension on account of such lockdown.

(4) This issues in line with approval of Hon'ble Minister, New and Renewable Energy and Power."

18.3. A careful reading of the above memorandum would imply that it is meant for extension of time for commissioning the project. It grants similar time extensions to other stakeholders down the value chain like EPC contractor, materials, suppliers, OEM etc., Thus the purpose of above memorandum is to address the difficulties of the ongoing project, evidently because there was a situation where the operation of supply chain to the projects was stalled. It cannot be made applicable for the Commissioned plants like the plants being dealt in the case on hand. Therefore, given the purpose of the memorandum as above, treating this memorandum as applicable to the petitioner's project which had been already commissioned before the Covid period is not permissible.

18.4. Therefore we are unable to concede to the contention of the petitioners to account the Covid epidemic as one of the reasons attributable to the poor CUF of their plants.

19. Having declined the reasons relating to irradiation and Covid 19 and accepted the reason of loss of generation due to curtailment towards the lower CUF, the Commission now proceed to deal with working methodology to account the loss of generation during curtailment.

19.1. The block wise curtailment, duration and related data are furnished before us by both parties comprehensively. However, the curtailment details furnished by the SLDC is not segregated between the two petitioner plants nor the percentage of curtailment indicated for any blocks. These sub-data within the block wise data are essential to compute the cumulative loss of generation on compilation of block wise loss of generation. On the other hand, the exhaustive data furnished by the petitioners with comparatively better elaboration and clarity, contain the plant wise and percentage wise curtailment for each block and respective duration. We do not find any infirmity in the quantum of the annual generation furnished by the petitioners, which constitutes the base for evaluation of loss of generation during curtailment hours, to be realistic and reasonable. The correctness of this core data is further reinforced when corroborated with the capacity of the respective plants and other matching parameters. These data furnished by the petitioners are not disputed by the respondents as well. Therefore it is fair and reasonable to accept and take in to account of the data provided by the petitioners for the purpose of assessing the loss of generation during curtailment to arrive at a rationale conclusion.

The working of loss of generation computed accordingly with the generation and curtailment durations are as under:

19.2. The actual generation during 2021-22 where the petitioners have met the committed CUF could be the realistic data to constitute as a base from which the possible units that would have been generated during curtailment duration could be computed.

19.3 The petitioners have furnished in their common rejoinder the irradiation pattern during generation period. From the load curve submitted by the petitioners, it is seen that the pattern of solar generation follows a trajectory beginning from sunrise, raising steadily, reaching peak during midday and gradually descending thereafter toward sunset. The petitioners have also furnished the chart depicting the pattern of corresponding energy generation during the day from sun rise to sunset. Nearly 80% of the day's total generation happens between 09.00 and 15.00hrs that cover 7 out of 13 operating hours and the balance 20% in the remaining 6 hours. We find that the projections made by the petitioners in terms of hourly generation based on the recorded data 2021-21 supplemented with the above analysis of the changing irradiation level during the day and corresponding power generation is scientific, realistic and hence acceptable.

19.4. The recorded data and resultant projection of hourly generation for 2020-21 as furnished by the petitioners from page no.105 to 115 in the Annexure of their common rejoinder affidavit based on the foregoing analysis are as below:

20. Annual generation / generation during solar hours- NVR ENERGY:

Sl. No.	Particulars	Unit	Based on recorded data (2020 - 21)
1	Annual operating hours - Solar hours (365daysx11hrs)	Hours	4015
2	Effective solar hours annually	Hours	2162
3	Low irradiation Hours annually	Hours	1853
4	% of generation in effective solar hours	%	80%
5	% of generation in low irradiation hours	%	20%
6	Annual Generation in effective solar hours	MWh	136756
7	Annual Generation in low irradiation hours	MWh	34189
8	**Actual hourly generation**	**MWh**	**63.26**

20.1. **Computation of possible loss of generation due to curtailment:**

We further find that the hours of curtailment incorporated in the following tables tally with the cumulative block wise curtailment hours furnished by the petitioners for the respective years and respective plants.

Plant capacity : 100MW
Computed hourly generation : 63.26 MWh (sl. No 10 of the above table)

Particulars	**NVR Energy**	
	Unit	**2020-21**
Normative Running Load	MW	100
Annual Operating Hours	Hours	4015
Annual Designated generation P-50	Mwh	170945
Load Curtailment in %		25%
Hours (A)	Hours	673.42
capacity Loss (B)	MW	25
Generation Loss ((AxBx63.26) /100)	Mwh	10650.14
Load Curtailment in %		50%
Hours (A)	Hours	28.38
capacity Loss (B)	MW	50
Generation Loss ((AxBx63.26) /100)	Mwh	897.6594

Load Curtailment in %		75%
Hours (A)	Hours	9.9
capacity Loss (B)	MW	75
Generation Loss ((AxBx63.26) /100)	Mwh	469.7055
Total Hours	Hours	711.7
Total Generation Loss	Mwh	12017.5
Total Generation Loss	**Kwh**	**12017502**

20.2 **Reassessment of CUF for NVR energy for 2020-21:**

Actual generation during the period FY 2020-21 (Page 4 of common additional affidavit filed by petitioners) = 11,96,14,500 units

Loss of generation due to curtailment = 1,20,17,502 units

Total = 13,16,32,002 units

CUF = 13,16,32,002 / 100MWx365daysx24hrs

= 15.03%

21**. Annual generation / generation during solar hours- NSTN:**

Sl. No.	**Particulars**	**Unit**	**Based on recorded data (2020 - 21)**
1	Annual operating hours - Solar hours	Hours	4015
2	Effective solar hours annually	Hours	2162
3	Low irradiation Hours annually	Hours	1853
4	% of generation in effective solar hours	%	80%
5	% of generation in low irradiation hours	%	20%
6	Annual Generation in effective solar hours	MWh	137578
7	Annual Generation in low irradiation hours	MWh	34394
8	**Actual hourly generation**	**MWh**	**63.64**

21.1 **Plant capacity : 100MW**

Computed hourly generation : 63.64 MWh (sl. No 10 of the above table)

Particulars	NSTN	
	Unit	**2020-21**
Normative Running Load	MW	100
Annual Operating Hours	Hours	4015
Annual Designated generation P-50	Mwh	171972
Load Curtailment in %		25%
Hours (A)	Hours	566.57
capacity Loss (B)	MW	25
Generation Loss ((AxBx63.64) /100)	Mwh	9014.129
Load Curtailment in %		50%
Hours (A)	Hours	28.8
capacity Loss (B)	MW	50
Generation Loss ((AxBx63.64) /100)	Mwh	916.416
Load Curtailment in %		75%
Hours (A)	Hours	15
capacity Loss (B)	MW	75
Generation Loss ((AxBx63.64) /100)	Mwh	715.95
Total Hours	Hours	610.37
Total Generation Loss	Mwh	10646.49
Total Generation Loss	**Kwh**	**10646495**

21.2 **Reassessment of CUF for NSTN for 2020-21:**

Actual generation during the period FY 2020-21 (Page 3 of common additional affidavit filed by petitioners) = 11,26,00,500 units

Loss of generation due to curtailment = 1,06,46,495 units

Total = 12,32,46,995 units

CUF = 12,32,46,995 / 100MWx365daysx24hrs

= 14.07%

22. The CUF computed as above shall be taken as the revised CUF for the petitioner's plants for the year 2020-21and the penalty already imposed shall be re calculated and revised accordingly.

23. As far as the year 2019-20 is concerned, since we have already concluded that the date of commercial operation shall be taken into account and the percentage wise curtailment for the respective plant could not be segregated for the remaining months of 2019-20 ie 11/19, 12/19, 1/20, 2/20 and 3/20, we are unable to compute the CUF for this duration. We direct that the CUF for 2019-2020 shall be re-calculated as follows:

[Actual generation during the period from 11/19 to 3/20] - A

[Possible loss of generation on account of curtailment, during this duration of 11/19 to 3/20 with respect to plant capacity commissioned during the same duration of 11/19 to 3/20 (in the manner as computed in this order for FY2020-21)] -B

$$\frac{A + B}{(C \times P \times 24)} =$$

$$\text{Revised CUF} = \frac{[A+B]}{[\text{Plant capacity commissioned} \times 5 \text{ months} \times 24 \text{ hrs}]}$$

C= Plant Capacity

P= Period

Note: If the commissioned plant capacity varies during this period of 5 months, the calculation shall be split to such periods and added together to account for the total period of 5 months:

24. The respondents shall work out the above revised CUF within 15 days and communicate the working sheet to the petitioner forthwith for reconciliation. After reconciliation the revised CUF for the period 2019-20 shall be finalised and the penalty already imposed shall be revised accordingly.

25. The additional counter affidavit filed by the respondent indicating that further sums of Rs.3.91 Crores and Rs.2.69 Crores for the period 2019-20 and 2020-21 following Audit slips is opposed by the petitioners on the ground that the revised calculation does not take into account the modification in the forbearance price in 2020-21 on a time-weighted average basis but calculates the forbearance price on a monthly basis, resulting in further deduction of Rs.6 crores, in addition to the Rs.25 Crores already deducted by respondent.

25.1. Let us refer the CUF related PPA terms once again to understand the applicability of forbearance price:

"6. Capacity Utilisation Factor (CUF)

The Capacity Utilisation Factor (CUF) shall be 17% to 19%, calculated on yearly basis. In case the availability is more than the maximum CUF specified, i.e., 19%, the Distribution Licensee will purchase the excess generation, at Average Pooled Purchase Cost (APPC) or the PPA tariff or the applicable preferential tariff, whichever is less. In case the availability is less than the minimum CUF specified i.e., 17%, the SPG shall pay Distribution Licensee for the actual shortfall in terms of units at the prevailing forbearance price fixed by the CERC, since the Distribution Licensee is an obligated entity to utilize solar power as per Hon'ble TNERC's RPO Regulation."

25.2. A careful reading the term would imply that the CUF which is calculable on annual basis could be calculated only at the end of annual operation of the plant,

evidently because of the varying nature of the season throughout the year as already elaborately discussed in this order. The "*actual shortfall in terms of units "* specified in the PPA term is the shortfall of units only for the year and not for given month(s). That being the case CUF cannot be segregated on monthly basis merely to match the monthly forbearance price. The application of CUF and forbearance price goes hand in hand since the categoric object of the PPA term itself stands on annual basis. It is this parameter that is paramount in understanding the application of forbearance price aimed by the PPA term. When CUF is based on annul basis the forbearance price shall also be on annual basis. The term "*at the prevailing forbearance price"* in the above terms has to be correctly interpreted as the prevailing price during the given year. If there is a change in forbearance price in a given year, it has to be calculated on the weighted average basis only for the year, with same sanctity behind the calculation of CUF which is also evolved on the weighted average performance of the plant during a given year.

26. In light of the above, we are in agreement with the contention of the petitioner that the forbearance price shall be applied only on annual weighted average basis in line with the objective of the PPA terms. We direct the respondents to duly re-calculate the dues payable for the annual shortfall units with application of annual weighted average forbearance price and make necessary revision in the calculation.

27. In the upshot of the findings, ultimately this Commission pass the following order:

(a) The petitioner's prayer to issue direction to revise the CUF band specified in the PPA dated 26.09.2017 is dismissed.

(b) The Licensee shall not back down / curtail RE generation for reasons other than grid security as already reiterated the earlier orders of this Commission.

(c) The CUF for the year 2020 -2021 is revised as below:

NVR Energy Private Limited - **15.03%**

M/s. Narbheram Solar TN Private Limited- **14.07%**

(d) The respondent shall re-work out the CUF penalty for 2020-2021 based on the above CUF and annual weighted based forbearance price within 15 days and communicate the working sheet to the petitioners forthwith for reconciliation.

(e) For the year 2019-20, the CUF shall be re-worked within 15 days as specified in Para 23 of this order and communicate the working sheet to the petitioners forthwith for reconciliation. After reconciliation the revised CUF for the period 2019-20 shall be finalised and the penalty already imposed shall be revised accordingly.

(f) In all cases, excess amount if any collected already shall be refunded to the petitioners within 60 days from the date of this order.

(g) No, coercive action shall be taken by the Licensee during the above process.

(h) Parties directed to bear their respective costs. Both the petitions D.R.P.No.13 of 2023 and D.R.P.No.12 of 2023 stand disposed of on the above terms.

(Sd.....)	(Sd.....)	(Sd.....)
Member (Legal)	Member	Chairman

/True Copy /

Secretary
Tamil Nadu Electricity
Regulatory Commission