

NORTHERN POWER DISTRIBUTION COMPANY OF TELANGANA LTD.

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SOUTHERN POWER DISTRIBUTION COMPANY OF TELANGANA LTD.



RESPONSES TO OBJECTIONS / SUGGESTIONS DURING PUBLIC HEARING

On

Levy of GRID SUPPORT CHARGES proposals by TS DISCOMs

For

F.Y.2023-24

INDEX

S.No.	Name and Address of the Objector	Pg.No.
1.	M/s NAVA LIMITED M/s NAVA BHARAT ENERGY INDIA LIMITED Nava Bharath Chambers , 6-3-1109/1,3rd floor, Raj Bhavan Road,Somajiguda, Hyderabad, 500082, Telangana	
2.	M/s ORIENT CEMENT LIMITED 5-9-22/57/D, 2nd and 3rd Floor, GP Birla Centre, Adarsh Nagar, Hyderabad-500063	
3.	M/s SARVOTHAM CARE 1-20-248, Umajay Complex, Rasoolpura, Secunderabad – 500003 Telanagana	
4.	M/s ITC LIMITED Paper boards &speciality papers division, ITC Bhadrachalam house, Sardar Patel road, Secunderabad, 500 003, Telangana	
5.	M/s ENERSOL INFRA PRIVATE LIMITED Plot No 270/E, Road No. 10, Jubilee Hills, Hyderabad -500 033.	

1. Response to M/s NAVA Ltd & M/s NAVA BHARAT ENERGY INDIA LTD

S.No	Summary of Objections / Suggestions	Response of the Licensee
1	The TSDISCOMs whole presentation covered about the CPP only and no justification for IPP.	<p>In respect of other generators who are not CPPs, the transients and reactive power transfer are bound to take place between the Grid and generators as long as they operate in tandem with the Grid, more particularly with Wind and Solar generators that use inverters. Moreover, the disturbance, caused by the IPPs due to their outages which are also connected to the grid, is being addressed by the grid support. So, the Grid support is required for all generators and it is a distinguishable service and hence, it is made applicable to all generators.</p> <p>Further, it is admittable fact that CPP run in parallel with the Grid and get many advantages because of that, TSDISCOMs opines that confining levy of the Grid support charges to CPPs only does not provide for a level playing field as other generators connected to the grid also enjoy the same benefits as that of CPPs. Hence, TSDISCOMs proposes to bring other generators under the ambit of Grid support charges. So, the grid support cannot be extended free to a nexus of IPPs and other generators.</p> <p>As there is no differentiation of connectivity to the grid as far as IPP, CPP and Non-CPP and are considered requiring technical grid support for all types of power plants.</p> <p>The grid support charges are being proposed by the Distribution Licensees on generators who are having parallel operation of Power generation with grid, typically, any direct or indirect impact on transmission system due to faults, at Generator units running in parallel with grid, will be loaded on to the Distribution Licensees and are required to compensate the transmission system and SLDC.</p> <p>Hence, TS Discoms request Hon'ble Commission to consider and approve levy of Grid Support Charges to all the generators who are being benefited from the support of grid.</p>
2	The TSDISCOMs GSC proposals have no basis, simply borrowed from other states, Out of Sink. No justification on methodology.	<p>The detailed analysis and reasons, for levy of Grid Support Charges by TS Discoms, was already submitted to the Grid Co-Ordination Committee (GCC) and TS Discoms presented their views and analysis to all the stakeholders during the past GCC meetings with the stakeholders and also during the public hearings organized by TSERC regarding the ARR filings of TS Discoms.</p> <p>GCC after considering the views/suggestions of all the participants in the GCC meetings, submitted a report in October 2023, where they have stated that after the Technical Analysis and study, it was agreed that the generators (conventional, renewable and rooftop solar generators) receive technical support of Grid for Parallel Operation keeping in view of Stability, Reactive Power Management, fault level support and the majority of the GCC members agreed for levy of grid</p>
3	Very heavy charge for total installed capacity, the GSC should be on actual consumption. The GSC to be applicable to only CPP having captive consumption.	
4	The Generaors having PPAs with TSDISCOMs are excluded from levy of GSC; the export capacity by the CPP should be excluded. Should be levied on captive consumption but not on installed capacity.	
5	Nava submitted objections in GCC meetings, but they are not taken into account.	

1. Response to M/s NAVA Ltd & M/s NAVA BHARAT ENERGY INDIA LTD

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		support charges.
6	Proper detailed technical steady by the experts would have relevance. We are ready to bear the cost of technical study.	The GCC has already conducted a detailed technical study on grid support required for the Captive Power Producers and Solar & Wind projects.
7	Lot of protective systems are installed in CPP, no injection of reverse currents into the grid. Remedial measures will be taken if technical experts suggest so.	GCC has studied the technical fault analysis at generator end and the grid support availed by such generator for restoration in the fault instances. From this study it was concluded that the power plant requires technical support from the grid, which was included in the report submitted by GCC to Hon'ble TSERC.
8	Previously the grid size was small, the impact of CPPs was significant, now the grid size is larger, impact of CPPs is negligible.	Grid support is required irrespective of size of the grid. It is pertinent to mention that the parallel operation is a service which extends support to the system and at the same time it causes voltage dip in the system, harmonics, additional reactive power requirement irrespective of the size of the grid. By parallel operation the CPP has many advantages and hence they are liable to pay the charges for service being provided.
9	Imbalances of Harmonics are happening only due to captive power plants. Hence on captive power plants GSC can be levied.	<p>There is no differentiation of connectivity to the grid as far as IPP, CPP and Non-CPP and are considered, as technical grid support is required equally for all types of power plants.</p> <p>It is to note that GCC has conducted the detailed analysis on Grid support for renewable and rooftop solar generators and submitted a report in October 2023, where they have observed that the on-Grid Solar/ Wind inverter takes energy, reference voltage & frequency from the grid for the process of conversion of the DC power generated from solar panels/wind turbines to AC power. Further, the energy generated from the Solar panels/Wind turbines is uncertain and depends on the environmental conditions hence there is always uncertainty in energy output Solar plants/Wind plant. In case of sudden drop in from the solar plant/ wind plant, the load will have to be supported by the grid instantaneously and in case of excess generation, the Grid act as a supporting system for consuming the same instantaneously.</p> <p>Moreover, the AC power from the output of the inverter, is prone to be having a larger number of harmonics resulting in the distorted sinusoidal waveform. The Grid absorbs such harmonics thus aiding the Solar PV plants/ Wind plants.</p> <p>The consumer having installed solar panels may cause imbalance in the system as per their nature of consumption and likely possibility of exporting / importing energy in one or two phases but not in all phases.</p> <p>Thus, in all the above instances, the solar power plants/Rooftop PV systems, Wind plant takes support of the grid and hence the levy of grid support charges is essential and justified.</p>

2.Response to M/s ORIENT CEMENT LTD

S.No	Summary of Objections / Suggestions	Response of the Licensee
1	The TSDISCOMs have shown solar CPP analysis only not other CPPs	<p>It is to mention that GCC has conducted the detailed analysis on Parallel operation of CPPs and submitted a report in December 2023 where they have studied Grid connection and Isolated mode of conventional CPP plants. It was observed that in case of grid connection mode, with outage of one unit at CPP, Grid & other units of CPP are stable, no prominent swings detected in the other units, whereas in Isolated mode with outage of one unit at CPP, other units become unstable. Hence, the stability of machines of CPP improves by parallel operation with Grid. When the CPPs operate in isolation from Grid which means no connectivity with the Grid, the grid support charges will not be applicable.</p> <p>As per the analysis and technical study conducted by the GCC, the power plants operating in parallel to the grid are taking the support from the larger grid in the event of faults and other parameters which are affecting the grid and concluded that the GSC are to be levied.</p> <p>Hence, TS Discoms request Hon'ble Commission to consider the same and approve the levy of Grid Support Charges to all the generators who are being benefitted from the support of grid.</p>
2	Our generator runs in island mode for the maximum period.	
3	To consider the captive units when the generator is in synchronization with the grid	

3. Response to M/s Sarvotham Care

S.No.	Summary of Objections / Suggestions	Response of the Licensee
1	Solar plants are constructed near to load centres, due to which transmission & Distribution losses, summer peak demand will be provided to the TSDISCOMs and saving TSDISCOMs from buying power from Exchange thus saving money.	For the TSDISCOMs the peak load hours are from 6.00AM to 10.00 AM and from 6.00PM to 10.00 PM, and the solar generation during DISCOMs peak load hours is nominal.
2	SPPs are generating power during day time meeting the day demand and reduce the burden on power purchase cost of TSDISCOMs.	It is to reiterate that GCC has conducted the detailed analysis on Grid support for renewable and rooftop solar generators and submitted a report in October 2023, where they have observed that the on-Grid Solar/ Wind inverter takes energy, reference voltage & frequency from the grid for the process of conversion of the DC power generated from solar panels/wind turbines to AC power. Further, the energy generated from the Solar panels/Wind turbines is uncertain and depends on the environmental conditions hence there is always uncertainty in energy output from the Solar plants/Wind plant. In case of sudden drop in from the solar plant/ wind plant, the load will have to be supported by the grid instantaneously and in case of excess generation the Grid act as a supporting system for consuming the same instantaneously.
3	PPA plants are exempted with same technicalities. All the solar power plants are having certified devices and meeting the IEEE standards, so solar power plants can be exempted from the levy of GSC.	Moreover, the AC power from the output of the inverter is prone to be having a larger number of harmonics resulting in the distorted sinusoidal waveform. The Grid absorbs such harmonics thus aiding the Solar PV plants/ Wind plants.
4	The employees will be affected due to shut down of solar power plants.	The consumer having installed solar panels may cause imbalance in the system as per their nature of consumption and likely possibility of exporting/ importing energy in one or two phases but not in all phases. Thus, in all the above instances, the solar power plants/Rooftop PV systems, Wind plant takes support of the grid and hence the levy of grid support charges is essential And justified. Hence, TS Discoms request Hon'ble Commission to consider and approve the levy of Grid Support Charges to all the generators who are benefitting from the support of grid.

4. Response to M/s ITC Limited

S.No.	Summary of Objections / Suggestions	Response of the Licensee
1	The Public notice is not clear regarding O.P Numbers of the petitions admitted	The details are available in the public notice published in the news papers and the same are also uploaded in the TSERC website
2	No justification has been given pertaining to levy of GSC in TSDICOMS filings. Simply copied from the other states proposals.	The detailed analysis and reasons for levy of Grid Support Charges by TS Discoms is already submitted to the Grid Co-Ordination Committee (GCC) and TS Discoms have presented their views and analysis to all the stakeholders during the past GCC meetings with the stakeholders and also during the public hearings organized by TSERC regarding the ARR filings of TS Discoms.
3	The proposals in F.Y2022-23 referred to committee and there was no edge on the filings of F.Y2022-23.	<p>The committee report on the F.Y 2022-23 filings was submitted to the Hon'ble TSERC, and as per the instructions of Hon'ble TSERC, GCC has organized multiple meetings with committee members representing various generators where the views/ objections were received, and the TS Discoms have timely addressed such views/ objections orally during the meetings and also through written submissions to GCC for further response to the participants.</p> <p>It is to inform you that GCC analysed the views of members and data collected from various sources including Hon'ble CERC order Dt: 31.12.2008 issued based on the study conducted by Electrical Research & Development Association (ERDA). The analysis also included levy of Parallel Operation Charges/ Grid Support Charges by various states across the Nation and their methodology and Technical study on impact of CPP connectivity and renewable and rooftop solar generators to the Grid.</p>
4	GSC is a charge on connectivity, No GSc on PPA Generators, Grid voltage supports is not correct as solar power plants are connected to grid at grid voltage. Solar power can not be injected when the grid is down.	<p>The GSCs are meant for providing service to the CPPs, IPPS and other generators hence they are liable to pay the charges for service being provided.</p> <p>As per the GCC study on solar plants, it was observed that solar plants in Telangana are Grid tie inverters and always need a Grid support (Voltage reference) for injection of active power. The proposal for levy of GSC is for the technical support received by the generator due to the connectivity with larger grid.</p> <p>GCC studied the technical fault analysis at generator end and the grid support availed by such generator for restoration in the fault instances. From this study it was confirmed that the power plant requires technical support from the grid, which was included in the report submitted by GCC to Hon'ble TSERC.</p>
5	The solar power generators draw Reactive power while injecting active	Grid voltage reference is mandatory to inject power from the inverter to the grid and there

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	<p>power into the grid. The solar power generators are injecting reactive power during night hours. Solar power generators take the reference from grid voltage. Solar inverter stepped up and connected to the same voltage.</p> <p>As mentioned in the technical study in the GCC report, when the radial line from the grid trips, how is the support taken from grid?</p> <p>Why is the study in GCC report focused only on solar generators?</p>	<p>cannot be injection of power during the times of different voltage levels of the inverter with the grid. This kind of technical support from grid, at large, is required for the solar power plants throughout the year.</p> <p>Levy of Grid support charges for power plants are not only meant for reactive power drawal from the grid but also for the other technical support as stated in the above responses.</p> <p>As per the GCC study on solar plants, it was observed that during tripping of radial line from grid causing severe voltage instability and isolation from the grid. Further, it can be observed that solar plants in Telangana are Grid tie inverters and always need a Grid support (Voltage reference) for injection of active power. The GCC has also conducted the detailed analysis on Parallel operation of conventional CPPs and submitted a report in December 2023.</p> <p>GCC has organized multiple meetings with the stakeholders including representation from various generators. In these meetings the necessity of grid support, for renewable generators, was contested by some of the members. Hence to clarify those objections, GCC has carried out the technical study on renewable generators for the technical grid support required which was detailed in the GCC report.</p>
6	<p>Our objections never forwarded to the Grid Coordination Committee for clarification. TSDISCOMS know our objections but not placed before the GCC. GCC would have given an opportunity to the objectors in finalising the report. How the conclusions have come out without the presence of all members.</p>	<p>GCC has organized multiple meetings with committee members representing various generators where the views/ objections were received, and the TS Discoms have timely addressed such views/ objections orally during the meetings and also through written submissions to GCC for further response to the participants.</p> <p>TS Discoms have also addressed the views/ objections of consumers regarding the levy of GSC in the ARR filings of Discoms.</p>
7	<p>Now TSDISCOMs proposed to levy the GSC on all Generators instead of co-located CPP plants.</p> <p>CPP itself can meet fluctuations without the support of the grid.</p>	<p>In respect of other generators who are not CPPs, the transients and reactive power transfer are bound to take place between the Grid and generators as long as they operate in tandem with the Grid, more particularly with Wind and Solar generators that deploy inverters. Moreover, the disturbance caused by the IPPs due to their outages which are also connected to the grid is being addressed by the grid support. So, the Grid support is required for all generators and it is a distinguishable service and hence, it made applicable to all generators.</p> <p>Further, it is an admitted fact that CPP run in parallel with the Grid and get many advantages because of that, TSDISCOMs opines that confining levy of the Grid support charges to CPPs only does not provide for a level playing field as other generators connected to the grid also enjoy the same benefits as that of CPPs. Hence TSDISCOMs decides to bring other generators under the ambit</p>

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		<p>of Grid support charges. So, the grid support cannot be given free to a nexus of IPPs and other generators.</p> <p>As per the GCC study and technical analysis, it was observed that basically the fault level has the significance of service provided by utility to captive power plants in terms of voltage regulation, stability, reliability and absorbing the load variation/fluctuations. Most of the ancillary services are thus provided by the utility to the CPP through better fault level.</p> <p>The grid support charges are being proposed by the Distribution Licensees on generators who are having parallel operation of Power generation with grid. Typically, any direct or indirect impact on transmission system due to faults at Generator units running in parallel with grid will be loaded on to the Distribution Licensees and are required to compensate the transmission system and SLDC.</p> <p>As there is no differentiation of connectivity to the grid as far as IPP, CPP and Non-CPP are considered as technical grid support is required equally for all types of power plants.</p> <p>The licensee has not proposed any charges for power plants who operate their plants in island mode. The GSC is definitely a service to the power plants and such services need to be charged .</p>
8	<p>All the fluctuations and harmonics are due to the type of load but not due to Generators. Demand charges are paid as per the CMD. Only power electronic, Non linear loads generate harmonics. Third harmonic is harmful, all other odd harmonics displaced near the load. Every inverter generates harmonics depends on the load.</p> <p>Mainly three kinds of industries viz i.e. Steel, Automobile and Petrochemical industries generate harmonics. How the TSDISCOMs will put all the industries under the same brush. Discoms should insist to install filters before connecting to grid.</p>	<p>The grid support charges are being proposed by the Distribution Licensees on generators who are having parallel operation of Power generation with grid. Typically, any direct or indirect impact on transmission system due to faults at Generator units running in parallel with grid will be loaded on to the Distribution Licensees and are required to compensate the Transmission system and SLDC.</p> <p>Hence, TS Discoms request Hon'ble Commission to consider and approve levy of Grid Support Charges to all the generators who are benefitting from the support of grid.</p> <p>The generators are benefited from the technical support of the grid for parallel operation with the grid (Stability, Reactive Power Management, Fault level support). Thus the GSC is not to be compared with the demand and capacity charges.</p> <p>It is true that the harmonics are being injected by the Induction Furnaces, Rectifier units and other power electronic devices, Certain captive users having such loads are injecting into the grid. In addition, Solar power plants are also injecting harmonics into the grid.</p> <p>As the grid support is not limited to the above advantages to the power plants and having many other advantages while running the power plants in parallel to the grid, the TSDISCOMs proposes Grid Support Charges on all types of Generators.</p>
9.	<p>The THD can be controlled by the Grid operators, it is their duty, and can be minimized by connecting various filters to the grid. It is also</p>	<p>TSDISCOMs have been identified the type of loads in each area of their jurisdiction and planning against the loading conditions, as a result the TSDISCOMs can able to supply reliable quality power to</p>

4. Response to M/s ITC Limited

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	TSDISCOM's essential duty to identify the major types harmonics injectors, record the things where it is happening and what is happening	<p>all the stakeholders, the TSDISCOMs are planning and supplying power in consumers prospective.</p> <p>As specified in CEA (Technical connectivity to the grid) Regulation, 2019, the users prone to generate harmonics, have to filter them before injecting/drawing power to/from the grid.</p> <p>The Grid operator can only monitor the harmonics being injected into the grid, but it is the responsibility of all the Grid user to minimize the harmonics as per the CEA regulation,</p>
10.	There are no ungrounded systems. Negative phase sequence currents flow through the plant loads first but not to the grid.	<p>In practical, the grid network resistance is very less as compared to the individual power plants, so the fluctuations flow through the grid first and part of them flows through the plant equipment.</p> <p>As per the GCC study and technical analysis, it was observed that due to higher fault level of the grid at the point of common coupling, the flow of pollutants like harmonics, negative phase sequence currents are absorbed by the grid due to low impedance path of the grid as compared to that of CPP generators.</p>
11	The way of levy GSC should not be like "Some are generating the harmonics and we will charge every one"	<p>TSDISCOMs proposed to levy GSC on CPP, IPPs and other generators who take support from the grid in terms of voltage stability, Reactive Power Management, Fault level support and grid reference voltage & load fluctuations but not limited to Harmonics.</p> <p>The grid support charges are being proposed by the Distribution Licensees on generators who are having parallel operation of Power generation with grid. Typically, any direct or indirect impact on transmission system due to faults at Generator units running in parallel with grid will be loaded on to the Distribution Licensees and are required to compensate the transmission system and SLDC.</p>
12	The motors draw high starting currents and it is TSDISCOM's obligation to supply power required by the loads as per the GTCS.	<p>The high starting currents drawn from the grid by the loads of users are supported by the TSDISCOMs even when there is a loss of consumption and demand in the energy meters due to instantaneous high starting currents are not being sensed by the meters as the meters consider only the average samplings in the respective integration periods.</p>

5. Response to M/s ENERSOL INFRA Pvt Ltd

S.No.	Summary of Objections / Suggestions	Response of the Licensee
1	The TSDISCOMS getting 10-12 Rs/unit as revenue from their tariffs and paying only 2Rs/unit to the solar generators against power purchases.	As per the RST Order for FY 2023-24 approved by Hon'ble TSERC, the average CoS for FY 2023-24 is Rs.7.02/kWh and the average recovery of cost through revenue realisation is Rs.5.81/kWh, resulting a deficit of Rs.1.21/kWh.
2	The proposal for levy of GSC on generators is double charging, which are already covered under demand charges.	<p>The grid support charges are being proposed by the Distribution Licensees on generators who are having parallel operation of Power generation with grid, typically, any direct or indirect impact on transmission system due to faults at Generator units running in parallel with grid will be loaded on to the Distribution Licensees and are required to compensate the transmission system and SLDC.</p> <p>As per the GCC study on solar plants, it can be observed that solar plants in Telangana are Grid tie inverters and always need a Grid support (Voltage refence) for injection of active power. As the IPPs, CPPs are benefited from the technical support of the grid for parallel operation with the grid (Stability, Reactive Power Management, Fault level support). Thus the GSC is not to be compared with the demand charges.</p>
3	Why TSDISCOMs, TSTRANSCO and TSGENCO are not putting Solar Generators and not supporting green energy.	The TSGENCO has installed solar power plants at various locations in the state of Telangana, TSDISCOMs are purchasing the green energy form the generators on top priority beyond the targets fixed by the Hon'ble TSERC. Hence the TS power utilities are supporting the green energy.