



TATA POWER-DDL

Tata Power DDL/PMG/CERC/29072019

Dated 29th July' 2019

Mr. Sanoj Kumar Jha (Secretary)
Central Electricity Regulatory Commission
3rd & 4th Floor, Chanderlok Building,
36, Janpath, New Delhi- 110001,

Subject: Constitution of Expert Group to review "Indian Electricity Grid Code and other related issues".

References:

1. CERC notification no ENGG/2012/1/2019-CERC dated 10th June' 2019.
2. Stakeholders meeting held at CERC on 22nd July' 2019.

Dear Sir,

This has reference to the CERC notification no ENGG/2012/1/2019-CERC dated 10th June' 2019 and meeting held at CERC on 22nd July' 2019 on the above captioned matter, wherein all the stakeholders were advised to provide their comments.

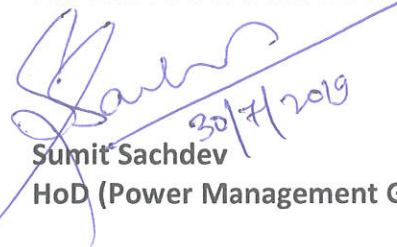
We are thankful to the Hon'ble Commission to provide this opportunity to us and In line with the same, please find attached a copy of Tata Power-DDL comments on the subject matter as an annexure to this letter.

We will be happy to respond in case any further clarification is required on the same.

Thanking you,

Yours sincerely,

For Tata Power Delhi Distribution Limited,


30/7/2019
Sumit Sachdev
HoD (Power Management Group)

TATA POWER DELHI DISTRIBUTION LIMITED

(A Tata Power and Delhi Government Joint Venture)

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Sr. No.	Clause No	Existing	Proposed	Justification / Remarks
1	2.1.(ff) Force Majeure	<p>Any event which is beyond the control of the persons involved which they could not foresee or with a reasonable amount of diligence could not have foreseen or which could not be prevented and which substantially affects the performance by person such being the following including but not limited to:-</p> <p>a) Acts of God, natural phenomena, floods, droughts, earthquakes and epidemics;</p> <p>b) Enemy acts of any Government domestic or foreign, war declared or undeclared, hostilities, priorities, quarantines, embargoes;</p> <p>c) Riot or Civil Commotion;</p> <p>d) Grid's failure not attributable to the person.</p>	<p>Force majeure conditions mentioned in IEGC are applicable for performance indices calculation, however force majeure has not been considered in power scheduling and dispatch activity.</p> <p>A suitable provision considering the force majeure event related to power scheduling and dispatch should be incorporated and the same should be given due consideration for the purposes of DSM regulations. The Discom/Buyer should not be held liable for under-draw or over draw in case of any Force Majeure Events and consequential DSM penalties. Tripping of transmission line, STU /CTU equipment should be considered as force majeure for Distribution companies.</p>	<p>Onus for supplying cost reflective power with reliability is on Discom only. However, mal-functioning/failure of STU/CTU transmission lines/equipment is sole responsibility of the respective asset owners, and hence any failure of the same and resultant effect of the power supply should be attributable to the respective asset owners. To address the same there is a need of devising an appropriate commercial mechanism to protect the Discoms from the penalties accruing on account of fault of others under DSM or any other Regulation and getting the necessary recovery from the defaulting entities. The same will help to create a robust power system and improve the reliability of power supply.</p>
2	2.8- Role of STU	<p>According to Sections 39 of Electricity Act-2003 and as defined in IEGC.</p>	<p>To consult state DISCOMS /understand their requirements and put up their issues in Regional standing committee meeting. Disseminate the decisions taken in their regional standing committee meeting to the DISCOMs and other state constituents.</p>	<p>It is suggested to assign this additional responsibility to STU as the same will lead to a better information flow and Co-ordination between Discoms and other Authorities such as SLDC, RLDC, RPC and other Local/Regional forums responsible for Power System Planning and operations.</p>



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3	3.4- Planning Philosophy	<p>a) CEA would formulate perspective transmission plan for inter-State transmission system as well as intra-State transmission system. These perspective transmission plans would be continuously updated to take care of the revisions in load projections and generation scenarios considering the seasonal and the time of the day variations. In formulating perspective transmission plan the transmission requirement for evacuating power from renewable energy sources shall also be taken care of. The transmission system required for open access shall also be taken into account in accordance with National Electricity Policy so that congestion in system operation is minimized.</p>	<p>Monitoring of the implementation plan so as to ensure end to end availability in time bound manner. An independent body should monitor the progress of these projects.</p> <p>Extensive planning of transmission capacity needs to be done considering the ongoing huge RE capacity addition. However, we propose that proper due diligence needs to be done for identifying the potential locations where these projects are coming considering the expected timelines for commissioning of the expected solar/ wind power generation. It should not happen in future that a huge transmission system is created on request of certain beneficiaries/project and in case of non-commissioning of such assets, the transmission charges are billed on the other beneficiaries. Connectivity and open access should be granted to these generators only after ascertaining the feasibility of these projects.</p> <p>Since as per IEGC, EHV starts from voltage level exceeding 33000 volts,</p>	<p>1. The same would result into timely execution of expansion/augmentation projects and will ensure that optimum transmission capacity is available at times of need.</p> <p>2. The same would result into optimum utilization of the existing assets and less capital investment thereby resulting into lower transmission tariffs for the end consumers.</p> <p>3. The same would lead to more accountability across the entire value chain and transmission project would be conceived and implemented in a more prudent fashion.</p>



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			<p>therefore planning criteria should be defined for 66KV and above voltage rating Grid substation and Lines for network reliability. Currently, it is defined for 132KV and above.</p> <p>Mechanism to be defined to ensure implementation of Detailed Project Report (DPR) on priority wherever CTU/STU fails to comply with the Planning criteria.</p>	



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4	4.6.2 - Data and communication facilities	<p>Reliable and efficient speech and data communication systems shall be provided to facilitate necessary communication and data exchange, and supervision/control of the grid by the RLDC, under normal and abnormal conditions. All Users, STUs and CTU shall provide Systems to telemeter power system parameter such as flow, voltage and status of switches/transformer taps etc. in line with interface requirements and other guideline made available by RLDC. The associated communication system to facilitate data flow up to appropriate data collection point on CTU's system, shall also be established by the concerned User or STU as specified by CTU in the Connection Agreement. All Users/STUs in coordination with CTU shall provide the required facilities at their respective ends as specified in the Connection Agreement.</p>	<p>a) In addition to the existing provisions contained in the grid code, there should be Proper use of data analytics to assess information/data including disturbance recorder/ sequential event recorder output at RLDC to analyse any grid disturbance/event. b) Further, there should be a strong IT infrastructure backbone which has end to end connectivity from NLDC/RLDC/SLDC to Discoms and open access consumers</p>	<p>The same is required in view of many ambitious projects being targeted by India such as Real Time Markets, Fast ancillary services market, Security constrained economic dispatch (SCED) and various other breakthrough changes being contemplated for Indian power markets. The same would ensure proper and timely information dissemination across different market players and would enable everyone to take an informed decision thereby leading to overall cost reduction. Robust IT system should be in place for effective and timely data transfer between Discoms and SLDC, RLDC, STU etc.</p>

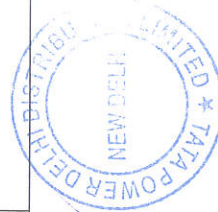


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5	Clause : 5.2.u Special requirements for Solar/ wind generators	<p>System operator (SLDC/ RLDC) shall make all efforts to evacuate the available solar and wind power and treat as a must-run station. However, System operator may instruct the solar /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.</p> <p>For this, Data Acquisition System facility shall be provided for transfer of information to concerned SLDC and RLDC</p> <p>(i) SLDC/RLDC may direct a wind farm to curtail its VAR draw/injection in case the security of grid or safety of any equipment or personnel is endangered.</p> <p>(ii) During the wind generator start-up, the wind generator shall ensure that the reactive power drawl (inrush currents in case of induction generators) shall not affect the grid performance.</p>	<p>In the current regulations the RLDC and SLDC have been conferred with the authority for curtailing Solar / Wind generators for the purpose of grid security and safety. However in alignment with the current government policy, 40% of the solar addition is to be done in the form of roof top solar installation. While individually these installation are very small and cannot impact grid security as such, as an aggregated generation, they can have profound impact on the grid. As these installations would be connected to DISCOM network, DISCOMs need to be given the authority to disconnect distributed generation during periods of grid disturbance/instability.</p>	<p>This will help manage grid imbalance during emergency conditions and shall enhance Grid Security.</p>

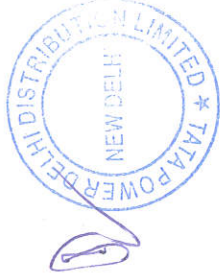


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6	Clause : 5.3 (e)	<p>(e) While the demand estimation for operational purposes is to be done on a daily/weekly/monthly basis initially, mechanisms and facilities at SLDCs shall be created at the earliest but not later than 1.1.2011 to facilitate on-line estimation of demand for daily operational use for each 15 minutes block.</p>	<p>SLDC must have implemented the Online estimation of demand for operational purpose and therefore this clause should be reviewed.</p>	<p>Onus of demand estimation on SLDC in addition to distribution company will improve Power system. Accurate Demand estimation plays very crucial role in power scheduling and dispatch. Concerned SLDC can take decision of generation on/off bar with data of demand estimation.</p>
7	5.4 Demand Management	<p>5.4.1 Introduction This section is concerned with the provisions to be made by SLDCs to effect a reduction of demand in the event of insufficient generating capacity, and inadequate transfers from external interconnections to meet demand, or in the event of breakdown or congestion in intra-state or inter-state transmission system or other operating problems (such as frequency, voltage levels beyond normal operating limit, or thermal overloads, etc.) or over drawl of power vis-à vis of the regional entities beyond the limits mentioned in UI regulation of CERC</p>	<p>In current form, this section deals with demand reduction measures for grid security. This should incorporate all modes of Demand Response. As more and more distributed generation is added behind consumer meters, the provisions and definitions of Demand Management should evolve to incorporate the same. In addition to current defined processes of demand curtailment, provisions for consumer generation curtailment should also be incorporated. A certain percentage of demand by the prosumers should be compulsorily made available for demand response (e.g. auto curtailment/battery storage) for a specified time (say 30Mins).</p>	<p>Improved frequency profile of the Grid.</p>



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8	Clause 6.5 , scheduling and Dispatch procedure (point -25):	25. For any revision of scheduled generation, including post facto deemed revision, there shall be a corresponding revision of scheduled drawls of the beneficiaries.	Post facto revision of schedule should not be allowed in circumstances as real time power management is done as per drawl schedule. Hence final drawl schedule of the day should be used for all commercial and operational purpose. Any revision in end of day schedule after the 00:00 Hrs. of the day should be though proper approval of buyer and seller.	Post facto revision of schedule leads to deviation penalties for Discoms & hence needs to be stopped.

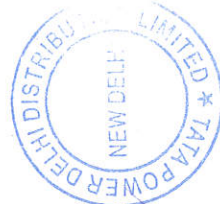


General Submissions

Sr. No.	Subject	Tata Power-DDL Submissions	Justification / Remarks
1	Central Power scheduling and billing software for RLDC, SLDC and DISCOMs:	<p>Without intervention of technology, adherence to timely scheduling is very difficult. Major concern is that while going through acceptance procedure of RLDC and respective SLDC, message reaches to beneficiary or generator before one or two time block of actual implementation resulting in deviation between schedule and drawl and resultant deviation charges.</p> <p>Further, as of now, scheduling in 4 time blocks is a constraint specially as multiple entities like RLDC & SLDC are involved. A common platform/ software to be used for power scheduling in which all the entities are connected. The same would ensure an efficient and real time information flow among all the market participants so as to ensure that power can be scheduled in 4 time blocks and undue stress on the grid as well as Discoms/Generators can be avoided.</p> <p>In the event of power not being scheduled in 4 time blocks equal liability should be passed on to RLDC/ SLDC and only Discom should not be made to pay DSM/ ADSM penalties.</p> <p>Further, commercial activities of RLDC and SLDC are still through MS-Excel which is completely manual and error prone. The non-co-ordination of commercial and operational teams is evident as schedule data in real time power management and billing varies to a great extent resulting into issuance of provisional and final IREA.</p>	<p>Centralized web-based scheduling and power optimization software is need of hour for all the entities. Having common platform for scheduling and dispatching shall ensure transparency, accountability and minimize the risk of grid security. It shall also ensure scheduling to be implemented in 4 time block.</p>
2	Utilization of PSDF (Power System Development Fund):	<p>Funds received on account of DSM settlement and many other commercial and Grid discipline mechanisms goes to the PSDF. It is suggested that the schemes related to grid security like intra state ancillary, battery storage, expansion of transmission corridors should be given priority through utilization of PSDF. Available but rarely scheduled gas capacities within the state can be used for providing Intra State Ancillary services.</p>	<p>The same would result into development of Grid facilities and other associated Power system Schemes without any additional burden on the consumers.</p>



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3	Intra-state ancillary:	<p>Ancillary services are an indispensable part of the power system operation, which are required for improving and enhancing reliability of the power system. Ancillary Services may include a number of different operations such as frequency support, voltage support, and system restoration.</p> <p>Hon'ble Commission has issued regulations on Reserves Regulation Ancillary Services (RRAS) which have been in operation for more than a year now on regional level. In view of above, it is now necessary to lay down Intra-state ancillary services.</p> <p>Triggering Criteria of Reserves Regulation Ancillary Services (RRAS):</p> <ul style="list-style-type: none"> -Extreme weather conditions such as storms/cyclones, dust storms, fog, hail storms, etc. - Grid Security during contingency -Generating unit or transmission line outages, the transmission corridor or violation of ATC of any forced outage of any element, outage of hydro generating units due to silt -Trend of load met -Trends of frequency; -Loop flows leading to congestion, for example, in a scenario where real time flows are different from those considered while estimating the TTC/ATC and line loading issues. -Expected issues in renewable power scheduling. 	<p>Objective of the proposal of intra-state ancillary services is towards smooth implementation of DSM regulation and absorbing the challenges of renewable penetration at state level. It shall also help in keeping spinning margin at state level for contingency management and it should be controlled by SLDC.</p>

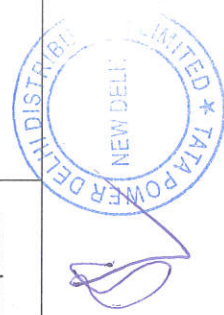


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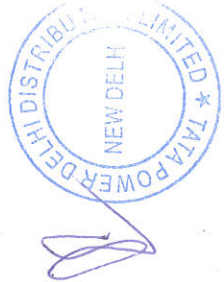
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4	Battery Storage	<p>To address these pressing requirements of the Grid with the integration of multiple Demand/Generation mix, Innovative technologies like Battery Storage would be the driving force to compensate for unpredictable renewable energy sources. Battery Energy storage can help in multiple ways to minimize financial losses:</p> <p>Utilization of Storage during Day ahead planning: This would enable overall reduction of Power purchase cost and maintenance of MOD.</p> <p>Battery storage can be intensively used during intraday i.e. real time power management. Considering over drawl and under drawl scenario the charging and discharging of storage will be multiple times in a day. The mechanism of incentive would need to be introduced for saving on deviation charges through innovative technologies like battery storage.</p> <p>DISCOM assets like Power Transformers, Distribution Transformers and Cable / Conductors are critical and cost intensive. Overloading of these assets on account of meeting the demand, reduces the life-cycle of the asset. By having a storage of 10-20% as a buffer, will help to reduce the peak load of the assets thereby optimizing the Technical loss as well as enhancing the asset life of the equipment.</p>	<p>With more & more introduction of electronic devices, power quality is also becoming a slow but vital challenge. Battery Storage can be utilized for Power Quality Management and preferential services can be provided to Key consumers thus improving quality of power supplied.</p> <p>Battery Energy storage will substantially help to absorb the risk of weather conditions, generator availability etc. and will create a delicate balance depending upon the storage capacity.</p>



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5	<p>Complementary Commercial Mechanism of IEGC</p> <p>"And"</p> <p>DSM charges applicable for Solar/wind Generators</p>	<p>Clause 5 of Complementary Commercial Mechanism of IEGC, specifies that the deviation charges payable by the wind and solar generators which are regional entities, shall be delinked from frequency and shall be accounted for as per the provisions of CERC (Deviation Settlement Mechanism and related matters) Regulation, 2014. However, Despite of being Governed by the same Regulations, there is a considerable difference in deviation charges payable by Discoms/Utilities and generators.</p> <p>As per 5th Amendment to IEGC (clause 3 provision 5) , The Cap rate for the charges for deviation for the generating stations, irrespective of the fuel type and whether the tariff of such generating station is regulated by the Commission or not, shall not exceed 303.04 Paise/kWh.</p> <p>DSM charges for Discoms/ State Utilities are linked with the day ahead MCP of power Exchanges and are significantly higher [Charges for deviation for Discoms/ State Utilities goes up to Rs. 08.00 per unit]. Discoms/State Utilizes are forced to operate in a band of 12% of the schedule or 150 MW which is lower. However, no such band is applicable for the generators.</p> <p>However, As per DSM Regulations 2014 (Clause 1(V) Regulation 5) the DSM Charges for Renewable energy generators are payable on the Fixed Cost (PPA Rates).</p> <p>Effects on the Discoms.</p> <p>The inability of Solar/Wind Generator to schedule power as per commitment has huge financial impact on Discoms. Tata Power-DDL has signed PPA's of around 600 MW from Renewable energy sources. Even a 20% reduction in schedule by the generators will result into a reduction of our schedule by 120 MW leading into undue DSM penalties as well as load shedding in our area.</p> <p>The penalty/DSM charges for solar/wind Generators are insignificant as compared to the charges applicable for the Discoms/State Utilities.</p>	<p>Accordingly, RE Generators (including wind and solar) need to be made more accountable to cater to the requirement of beneficiaries.</p> <p>If reduction in schedule of the renewable generators is more than a prescribed limit (say 15 % of the schedule), it should be the responsibility of Generators to purchase the resultant shortfall from the Real time Markets and schedule the same to the beneficiaries. The same is based on the practice being followed in the PJM markets where "Generators are required to pay for any generation that is below their scheduled quantities".</p>



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6	Responsibility of other stakeholders in the DSM Regime.	<p>It may be noted that there is no responsibility fixed upon various stakeholders like Transmission Utility and concerned Load Dispatch Centres in DSM regulations. Under the DSM Regulations, Hon'ble Commission has assigned the responsibility of maintaining the grid discipline on the Buyers and Sellers only. It may however be noted that there are certain factors which are not under the control of the sellers/buyers but can be better controlled by Transmission Utility and concerned Load Dispatch Centres. Grid security can only be achieved through a continuous and collective effort of all entities in Power System value chain.</p> <p>It is submitted that transmission line tripping (PGCIL/ DTL) should be considered a force majeure event for Discom and DSM penalty on account of the same should not be passed on to the Utilities. Transmission companies should be made accountable for the same.</p> <p>Further, any penalty levied on the Discoms on account of Grid Failure/Scheduling & accounting error on part of SLDC/RLDC should not be to the account of Discoms/State Utilities.</p> <p>It needs to be ensured that clear cut four time blocks are available to Discoms for getting revision in schedule. In the event of Generator not being able to provide with revised schedule as per requirement, Discoms/State Utilities should not be held liable for DSM/ADSM/sign change/violations/penalties.</p>	The same shall protect the interests of Discoms/end consumers and make every market participant more accountable.



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7	Expediting the implementation of Real time Markets.	To counter the huge schedule variations expected after the anticipated RE capacity addition, a mature Real Time Power Market is a must to safeguard the interest of the whole power System. The same may be made functional at the earliest.	The same shall provide an avenue to all the stakeholders (Discoms/Generators and the System Operator) to ensure that sufficient power is available on real time basis to handle any system contingency. Additionally, the same would result into more accountability on part of all the market participants thereby ensuring that end consumer is getting required power supply at most optimal cost.
8	Issues related to Corridor Utilization/Congestion	<p>In case of Corridor Congestion e-bidding is conducted by Regional Load Dispatch Centres. Discoms/State Utilities quote e-bidding charges to secure corridor in short term which is over and above short term open access charges. Under this scenario beneficiaries end up paying more for the utilization of the same transmission capacity.</p> <p>On the contrary, when generators tied under long term are on outage/breakdown and power is not being supplied by them to the long term beneficiaries, the resultant idle transmission capacity is utilized under short term. Hence it is suggested that during such period when generators are under outage/breakdown and power is not being supplied to the Long Term beneficiaries, the respective beneficiaries should be given a credit of the transmission charges corresponding to the long term open access capacity not being utilized by them.</p>	The same would result into rationalization of the transmission charges being paid by the beneficiaries and result into lower tariffs for the end consumers.

