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**Our reference:**

**Your reference:**  
No. L-1/260/2021/CERC

Sub: Central Electricity Regulatory Commission (Deviation Settlement Mechanism and Related Matters) Regulations, 2021

Sir,

Hon'ble CERC has brought amendment (draft) to Deviation Settlement Mechanism, which predominately driven by two factors

1. The user of the grid must strictly adhere to its schedule only, without acting based on grid parameters.
2. It's the predominately responsibility of POSOCO to ensure grid reliability, where POSOCO would exclusively depend on reserves – secondary and tertiary to maintain grid parameters like – frequency and Congestion.

Its fully understandable, that as the grid size increases the lesser deviation in frequency is seen with larger Area Control Error [ACE] because of system inertia / frequency response from larger quantum of loads. Hence a settlement based on frequency would not highlight the deviation seen by the grid. Its highly appreciated that delinking frequency from deviation is the way forward as it is seen in many advance grids (Europe / US).

SLDC in case of contingency where frequency deviates beyond IEGC range could support through the generators under its jurisdiction. Support of SLDC may be required as, we still lack robust exclusive capacity market which is present in advance grid. Hence it would be prudent to link frequency rates beyond IEGC range as this could happen only when POSOCO would have exhausted its options to kick in reserve – regulation up / down. Similarly, Congestion regulation needs to be aligned with this shift in ideology. SLDC should get a commercial signal to relieve congestion which does not contradict Deviation Settlement Mechanism. POSOCO would have issued notice for ATC/TTC violation only after exhausting its options to relieve congestion in real time. Hence SLDC could be saviour during such scenarios. Undermining the role of SLDC in reliable grid operation beyond maintaining its drawal up to schedule may need to be revisited since we don't have robust capacity markets. POSOCO may need a robust capacity market for ancillary services, which is still under development even at regional level and non-existing at state level. Once a concrete capacity market is in place both at RLDC and SLDC level, dependency on frequency linked deviation may be revisited.

Draft regulation has no payment mechanism for under drawal / over injection whereas has penalties of 10% for over drawal / under injection [not 110% as 100% would go into the energy charges which it drew]. Dispatchable generators can control their generation through set points, hence in better position to maintain their generation as per schedule. Hence draft amendment has rightly captured zero payment for over injection & 100+10% additional payment of Ancillary charges which should be higher than variable charge in most of the case. This would act as deterrent for dispatchable generators to deviate from schedule. Whereas in the Case of Buyer 10% penalty may not cover the overhead charges like losses [ around 4%], transmission charges [RTDA may not compensate fully] and other hassle for getting power from real time market etc. This could lead to a tendency by grid users to over draw as the penalty would be only 10%, whereas



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in vice versa condition it would be 100% loss of payment. It is recommended that 10% penalty needs to be enhanced [in slabs] linking it to the volume of over drawal [deviation slabs].

ACE and deviation have a predominate difference of frequency bias and needs to be considered for frequency sensitive loads. Inherent response to frequency deviation by load gets captured by ACE, but not by deviation. Hence as deviation is the parameter for settlement, under drawal needs to be compensated up to a certain extend as frequency would have played a role. Under drawal compensation limit can draw inspiration from power number. It is recommended that under drawal compensation should also consider of demand side forecast error and SCADA versus SEM error.

Renewable's contribution in Energy Mix do dominate control area deviation. In case of Control area with higher penetration of renewable in energy mix may require higher support from Ancillary services. Burden of arranging entire reserve required by SLDC for integrating RE (under the control of SLDC) may have technical as well as commercial limitation. National grid can help RE RICH states by sharing of its reserves. Hence RE RICH states based on grading [renewables in energy mix], should be allowed to lean on the grid to a certain extend based on the RE capacity, as that would help SLDC to absorb high RE by sharing of national reserves kicked in by POSOCO.

Non dispatchable generators may also require bandwidth of deviation in both the direction (under injection and over injection) as error in forecasting may not be unidirectional. In case they are not paid [ its not incentive] for energy injected, then they would try to keep the error in single direction by over forecasting.

Following suggestion may be considered, if deemed fit:

1. Introduce frequency linked DSM rates beyond IEGC range, for SLDC, so they can also support during contingency.
2. Supersede Congestion regulation [ with commercial penalties and incentive] over deviation during TTC violation for the upstream and downstream control area, based on POSOCO congestion notice and identified upstream and downstream entities.
3. Continue both receivable and payable mechanism up to certain limits for buyers, so that skewed behaviour of system operation is not seen. Receivable and Payable are not incentives/ penalties, but commercial settlement of imbalance energy arising from metering error, frequency response & demand forecast error.
4. Support RE RICH states to absorb renewables through Deviation, where national level reserve can be kicked in to support states with high RE in energy mix.
5. For non-dispatchable generators, both payable receivables should have limits, up to which they are not penalised.

Thanking You

Sincerely  
for DNV

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