





Operational Issues

- **Gamma** Station Heat Rate
- Auxiliary Energy Consumption
- □ Tariff & Billing Issues
 - Normative Quarterly PAF
 - Peak & Off Peak Tariff
 - **Gamma** Reagent cost in variable charges
 - Interest on Working Capital
 - □ O&M expenses
- Capital Cost & Additional Capitalization
 - Additional Capitalization on account of emission standard

Station Heat Rate



- There is no norm specified by CERC for 300 / 350 MW category.
- Norms specified by CERC is based on the actual data of NTPC stations with BHEL as BTG supplier. Whereas there are several imported BTG suppliers for which design parameters are defined in a different manner.
- CERC may appropriately address the above two issues in the regulations by publishing specific norms for 300/350 MW size units as well.
- Further CERC may exercise its own prudence check in working out the station heat rate for thermal generating stations. For eg:
- CERC allows heat rate degradation of 4.5% over and above the design heat rate.
- Gross design heat Rate = (Gross Turbine heat rate / Boiler efficiency)
- In BHEL supplier contract, all the above parameters guaranteed turbine heat rate and boiler efficiency is defined. However, the same is not defined in Chinese / Korean machines supplier contracts.
- Where as in several Chinese contracts, guaranteed gross design heat rate is not defined and the same can been derived as follows:
- Gross design heat Rate = (Gross Turbine heat rate / Boiler efficiency) + design margin. Such design margin is ~50 kcal/kwh and varies as per the unit size.
- CERC may consider such variations on case to case basis while allowing the heat rate.

Request:

- Commission may provide normative SHR for 300/350 MW as separate category.
- Commission may allowed normative SHR on case to case basis while considering contractual / commercial agreement with the BTG supplier.

Auxiliary Energy Consumption



- Auxiliary consumption of 300/350 MW sized unit cant be kept at same level of 500 MW unit.
- For most of the 300/350 MW sized unit even the design AEC is higher than the specified AEC of 5.75%.
- Since 500 MW and above sized units (also considering super critical units) have higher efficiency (lower heat rate), AEC for such units is lower as compared to 300/350 MW units

Request: Commission may provide normative AEC for 300/350 MW as separate category





- Operational Issues
 - Station Heat Rate
 - □ Auxiliary Energy Consumption
 - Tariff & Billing Issues
 - □ Normative Quarterly PAF
 - Peak & Off Peak Tariff
 - **Gamma** Reagent cost in variable charges
 - □ Interest on Working Capital
 - □ O&M expenses
- Capital Cost & Additional Capitalization
 - Additional Capitalization on account of emission standard

Normative Quarterly PAF



- As per 51 (5), carry forward of under-recovery of Capacity Charge shall not be allowed for recovery from one quarter to the subsequent quarter.
- There are instances where plants faced long forced shutdowns (10-15 days) on account of water shortages (for ex in Maharashtra), failure in ash handling plant, collapse of junction towers in coal handling plant, failure of Generation Transformers. The concept of NQPAF fails to consider such practical difficulties.
- Recovery of capacity charges based on cumulative Plant Availability allows generating stations to cover up any loss of availability due to economic or forced shutdown. Therefore, introduction of new concept of NQPAF would severely impacts recovery of fixed charges and the financial performance.

Request: Commission may continue with the existing principles of cumulative Plant Availability Factor for the Year for payment and recovery of AFC

Peak and Off-peak Tariff



- As per 51 (5), achievement of PAF less than the specified NQPAF in "Peak" or "Off-Peak" periods shall result in pro-rata reduction in recovery of Capacity Charge for the appropriate period. Further loss in recovery of Capacity Charge for Peak period shall not be off-set against the notional gain on account of over-achievement in Off-Peak period.
- In the prevailing coal supply shortage scenario, generating stations are not in a position to ramp up and ramp down during peak and off-peak hours. Coal shortage is now prevailing for more than 2-3 years and this is a situation which is completely beyond the control of generators.
- Therefore, it will be highly prejudiced to introduce peak and off-peak tariff in such an environment where generators are not in a position of full coal availability in spite of making 100% advance payments.
- We feel peak and off-peak tariff for generators can be introduced once the market is more mature especially in context of ready / easy availability of coal and healthy (financially strong) power procurer.
- Therefore, introduction of new concept peak and off-peak tariff would severely impacts recovery of fixed charges and the financial performance.

Request: Commission may continue with the existing principles of cumulative Plant Availability Factor for the Year for payment and recovery of AFC.

Humility | Entrepreneurship | Teamwork and Relationships | Deliver the Promise | Learning | Social Responsibility | Respect for Individual 6

Reagent Cost in Variable Cost



- As per 50 (2), normative consumption for Ammonia as a reagent for SOX control system is not provided.
- As per our assessment EADS (efficient ammonia dosing system) technology is equally efficient technology with lower operational cost and lesser issues of managing by-products. Therefore, proper assessment of such technologies may be evaluated by CERC.

Request: Commission may evaluate EDAS based technology for SOX control system and provide norms for consumption for the same.

Humility | Entrepreneurship | Teamwork and Relationships | Deliver the Promise | Learning | Social Responsibility | Respect for Individual 7

Interest on Working Capital – 1/2



- As per 34 (1) (a) (i), cost of coal towards stock for 20 days for non-pit-head generating stations for generation corresponding to the NAPLF.
- Considering the severe coal shortage prevailing in country, plants should be encouraged to stock coal to ensure plants are not shutdown in case of shortfall in supplies by CIL (eg. During strike periods in mines)
- Such reduction from existing 30 days is unfair and will discourages generators to stock coal. Therefore, the prevailing norm of 30 days may be continued to for both pit-head and non-pit head plants.

Request: Commission may retain 30 days in line with the existing regulations.

Interest on Working Capital – 2/2



- As per 34 (1) (a) (v), Receivables equivalent to 45 days of capacity charges and energy charges for sale of electricity calculated on the normative annual plant availability factor
- Today most of the plants are struggling to get timely payments from Discoms with delay of 3-4 months on regular bills and more than 1-2 year for disputed bills. The fact can be verified from the portal (PRAAPTI) managed by Ministry of Power (MoP).
- As per the PRAAPTI website the outstanding receivables for GMR Energy is more than 1600 Crs as on Oct'2018.

Request: CERC may increase the number of days of receivables to 90 days.

O&M Expenses



- For 300/ 350 MW units, O&M expenses allowed for FY 20 @24.22 lakhs/MW is less than as allowed for FY 19 @25.47 lakhs/MW under existing regulations.
- Average escalation considered in FY 14-19 was 6.30% whereas average escalation considered in FY 19-24 is considered @3.20%.
- O&M expenses for thermal power plants is based on expenditure incurred on spares and services during a year. Service related contracts are mainly dependent on manpower deployed and hence should be closely linked to the actual changes in labour rates, which may vary from one state to another.
- As per our experience, no new O&M contract can be finalized at a rate lower than the existing contract value. [This is line with the economic principle called "Ratchet Effect"
- Investopedia defines Rachet Effect as: "The ratchet effect refers to escalations in production or prices that tend to self-perpetuate. Once productive capacities have been added or prices have been raised, it is difficult to reverse these changes because people are influenced by the previous best or highest level of production."
- Therefore the quotes received for newer contract are always on a higher side compared to the existing contract value.

Request:

- Base O&M expenses of FY 20 must be higher than as allowed for FY 19 in existing regulations.
- CERC may allow annual escalation of 6.30% in line with the existing regulations for O&M expenses



G/

- Operational Issues
 - Station Heat Rate
 - □ Auxiliary Energy Consumption
- Tariff & Billing Issues
 - Normative Quarterly PAF
 - Peak & Off Peak Tariff
 - **Gamma** Reagent cost in variable charges
 - □ Interest on Working Capital
 - O&M expenses
- Capital Cost & Additional Capitalization
 - □ Additional Capitalization on account of emission standard

Additional Capitalization on Account of Emission Control

- As per 29 (1) A generating company requiring to incur additional capital expenditure in the existing generating station for compliance of the applicable revised emissions standards shall share its proposal with the beneficiaries and file a petition for approval for undertaking such additional capitalization;
- Commission may clarify whether CEA specified technology is the only technology which can be used for installation of FGDs.
- It is understood that CEA is yet to cover all the technologies. (eg ammonia based technology for SOX control is yet to be assessed by CEA). Therefore, it is essential that all the globally established technology should be included for assessment by CEA and for prudence check by CERC. CERC may also issue benchmark cost for all the global technologies.
- Provisional tariff may be allowed (to be continued) in line with Regulation 5 of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (First Amendment) Regulations, 2011

Request:

- Commission may include all major global technologies alongwith benchmark cost as a part of tariff regulations.
- Commission may also allow tariff on in-principle basis before actual commissioning. Such approval will help in getting bank loans for such projects.



Thank you

Humility | Entrepreneurship | Teamwork and Relationships | Deliver the Promise | Learning | Social Responsibility | Respect for Individual Humility | Entrepreneurship | Teamwork and Relationships | Deliver the Promise | Learning | Social Responsibility | Respect for Individual 13