Comments on “CERC (Terms and Conditions of Tariff) Regulations, 2024 [draft]”

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O&M Expenses – Missing Efficiency Factor

- The O&M expenses follow historical costs with due adjustment for inflation.
- The normative O & M costs for the upcoming control period should be adjusted for an efficiency improvement factor to be determined by the Commission. This would be in line with the spirit of the Act as well as the Tariff Policy.
- It is suggested that instead of taking the average of the escalation rates for the last 5 years for CPI and WPI respectively as per the existing approach, the Compound Annual Growth Rate (CAGR) of the indices may be used as it is a better representation of the same.

Introduction of efficiency factor for O&M expenses

$$\boldsymbol{O\&M_t = O\&M_{t-1} * \left(1 + \frac{Price\ Index_t}{Price\ Index_{t-1}} - X_t^{O\&M}\right)}$$

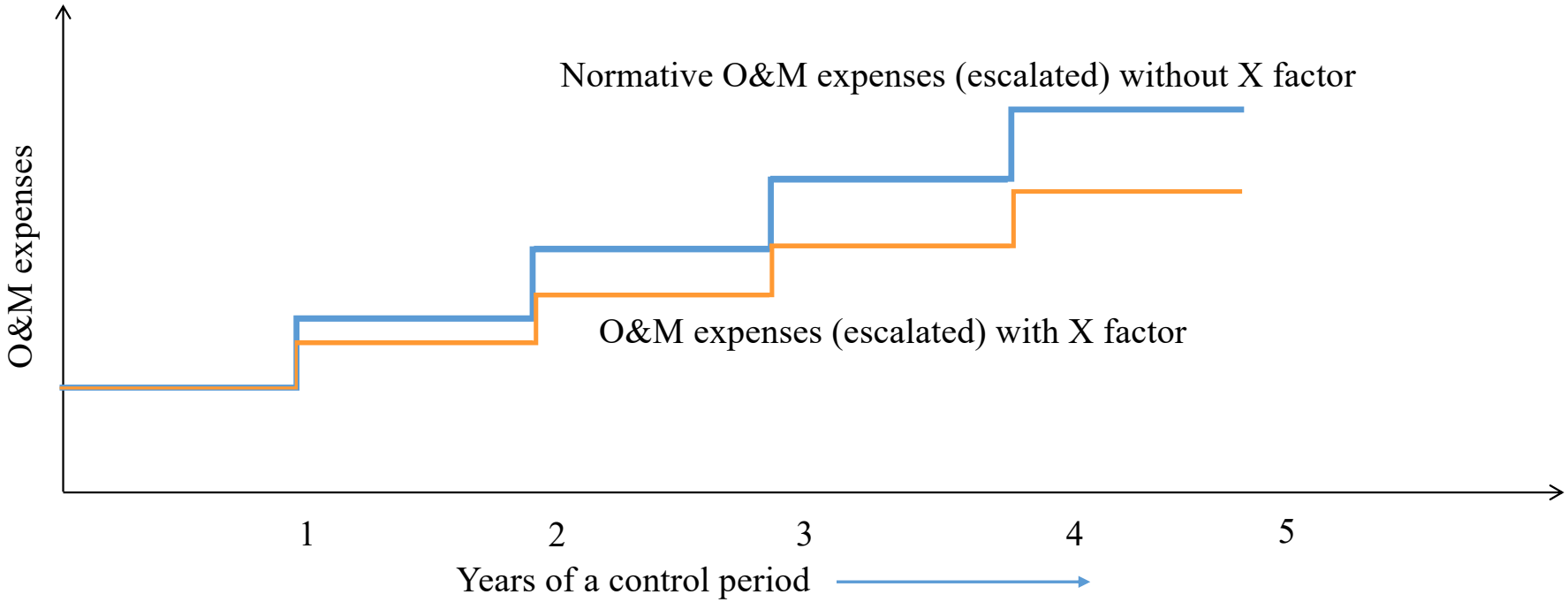
Where,

O&M: Normative Operation & Maintenance expenditure as approved by the Commission;

Price Index: Consumer Price Index for Industrial Workers;

$X_t^{O\&M}$: Factor representing an annual target for efficiency improvement in O&M.

Introduction of efficiency factor for O&M expenses



Absence of Efficient Benchmarks – Double Sample Selection Bias

- The O&M cost benchmarks have been arrived, as per EM, on the basis of actual O&M cost reported by a sample of plants owned by the central generating companies for which the data has been. This exercise suffers from double sample selection bias.
- The first case of sample selection bias emerges due to the fact that the actual O&M cost has been reported only for the plants owned by government owned entities.
- It is generally reported that the private sector plants tends to be operationally more efficient than those under government ownership. The current sample of data does not include private entities.
- Furthermore, the exercise may also suffer from another instance of sample selection bias as it does not have and also does not consider data across all the plants under the central generating companies.

Capacity group-wise number of units vis-à-vis data used for calculation of O&M expenses

Capacity Group	No. of Units				
	Central Sector	State Sector	Private Sector	Total (All India)	Data for analysis in EM
110 MW series	8	13	64	85	-
200/210/250/300/350 MW series	65	149	67	281	35
500 MW series	63	24	6	93	31
600 MW series	22	26	67	115	6
800 MW series	9	7	5	21	-

O&M expenses

- **Adjustment in O&M cost benchmark due to covid-19:**
  - As per EM, 5.89% has been derived as escalation rate after uprating of the actual (lower O&M expenses) during COVID-19 year.
  - A ‘lagged’ approach to set the O&M cost benchmarks allows for recovery of ‘the actual’ O&M expenditure after inflationary adjustment for the control period.
  - Since the generating companies have already reaped the benefit of lower O&M expense, the advantage of same should either be passed on to consumers through a ‘special true-up’ of the O&M cost for the COVID-19 year for the benefit of the lower actual O&M cost be reflected while working out the benchmark O&M cost **(without any adjustment).**

Approach to Reduce Regulatory Lag - Based on CPI & WPI on the basis of 3-year rolling period

It is recommended to use the 3 year moving average escalation rate with the latest year having a weightage of 50%, mid-year having the weightage of 30% and oldest year having the weightage of 20%.

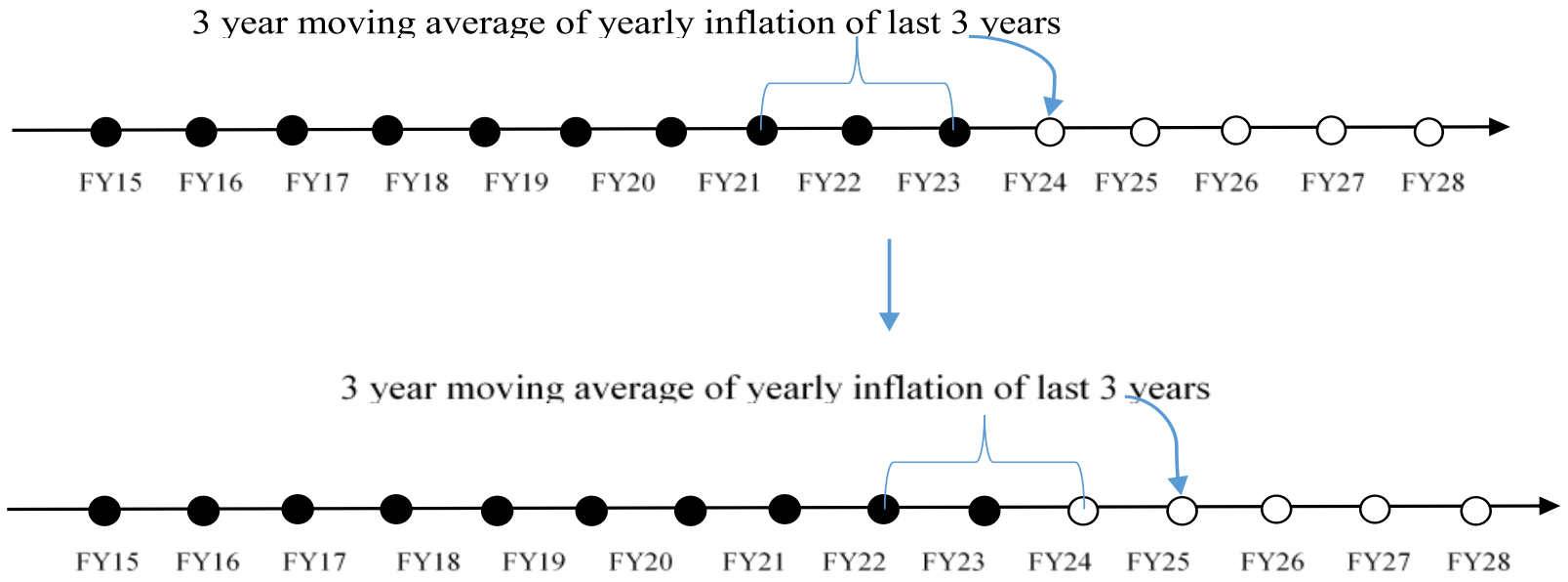
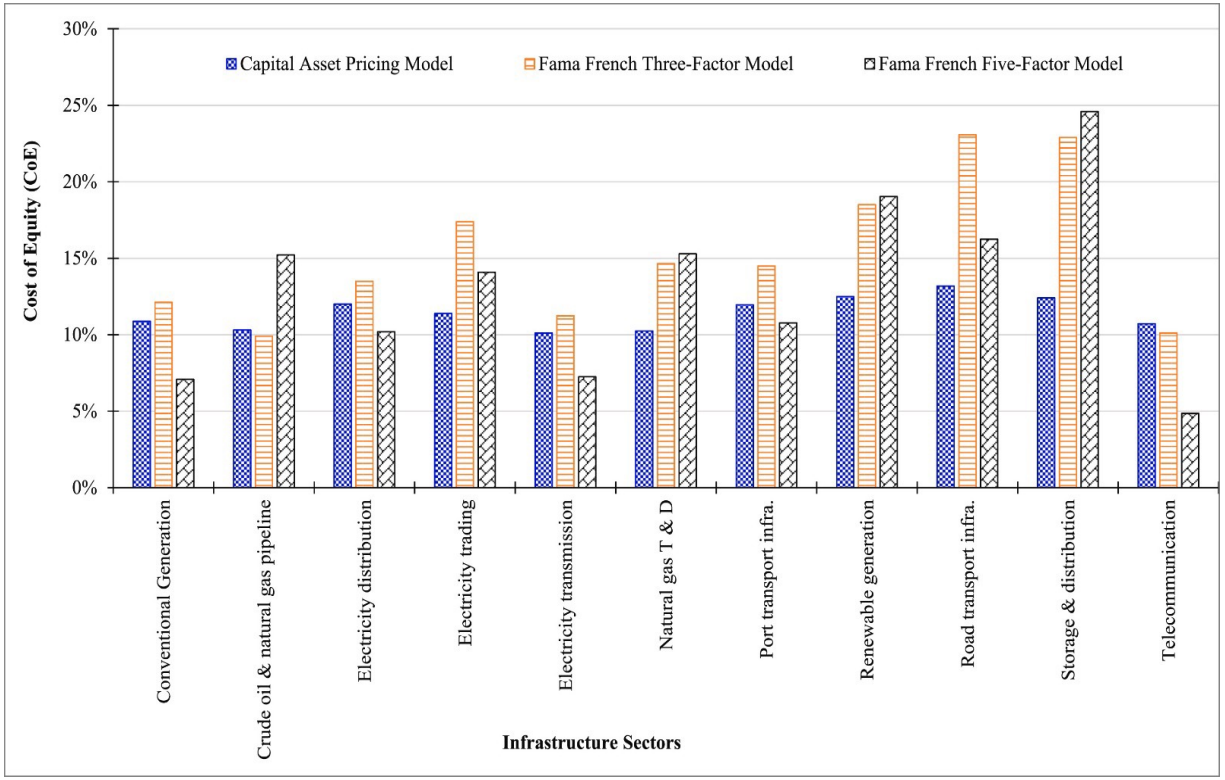


Figure 1: CER's approach for calculation of escalation factor based on three year moving average

Regulated Return on Equity

- Based on alternate capital asset pricing models, cost of equity across sub-sectors in the energy and infrastructure sector was found to be lower (10-12.5%) than the regulated return.
- The estimate of RoE should be based on a methodological approach that estimates return under a risk-return framework with credible market-based data.
- Further, transmission segment has significantly lower risk as compared with the generation and distribution segment, and thus attract lower RoE than generation. Reported RoE of major transmission companies in regulated business has hovered around 17.15 - 22.4% over the past three reported years. In comparison, reported RoE of regulated generation business hovers around 11.57 - 12.58% over the past three reported years.

Higher RoE for generating stations

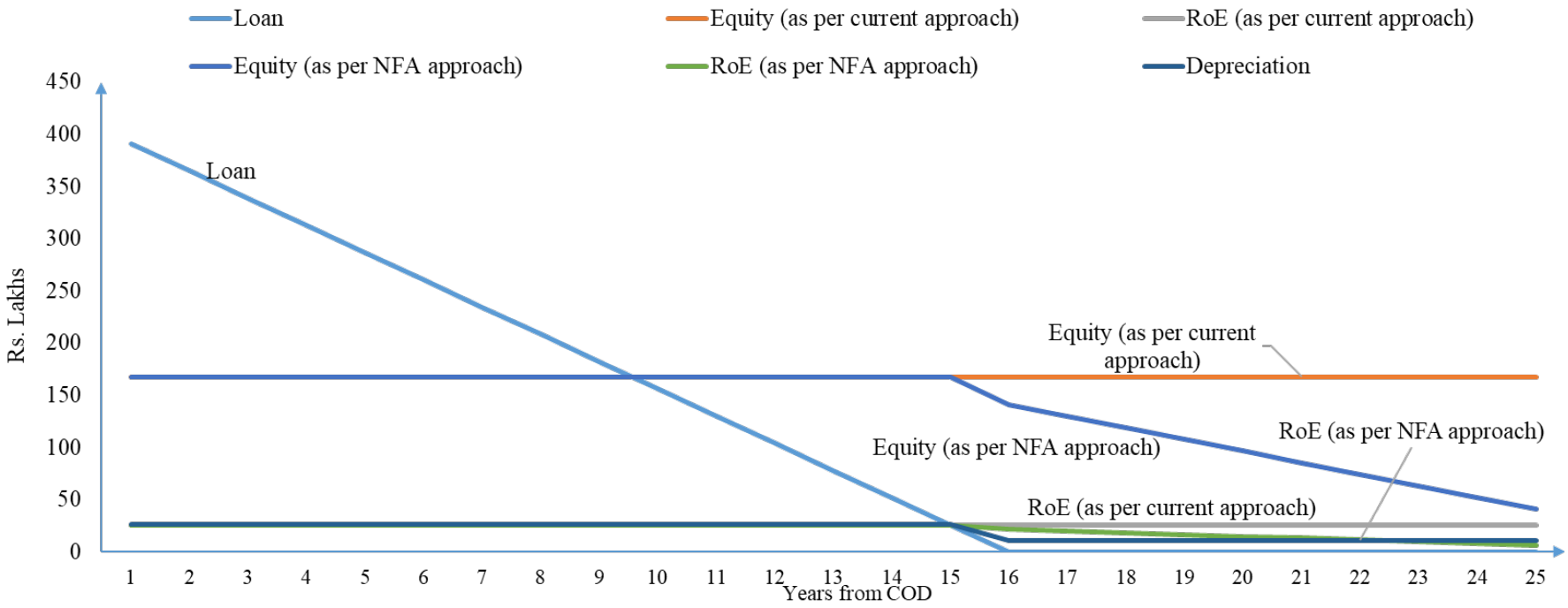


Kewal Singh, Anoop Singh, Puneet Prakash, 2022, "Estimating the cost of equity for the regulated energy and infrastructure sectors in India" *Utilities Policy*, http://dx.doi.org/10.1016/j.jup.2021.101327

Reduction of Equity Base post repayment of loan

- GFA Vs NFA Approach
- Post repayment of debt (i.e. accumulated depreciation > debt), the depreciation cashflow allows the investor to recoup by the invested equity, unless invested in and accounted for in the new/existing project, where these will attract the regulated return.
- In a manner the debt once recouped by the lenders do not attract any return (interest), the same philosophy should be applicable for recouped equity.

Depreciation – Reduction of Equity Base post repayment of loan



Working Capital - Calculation of Receivables for Marginal Plants

- Actual PLF of thermal plants are significantly lower than the NAPAF of 85% (especially for high ECR plants), and the actual coal stocks tends to be much lower than expected levels, coal stock requirement should be a reflection of the same. Furthermore, WC cost should be trued up for actual fuel stock.

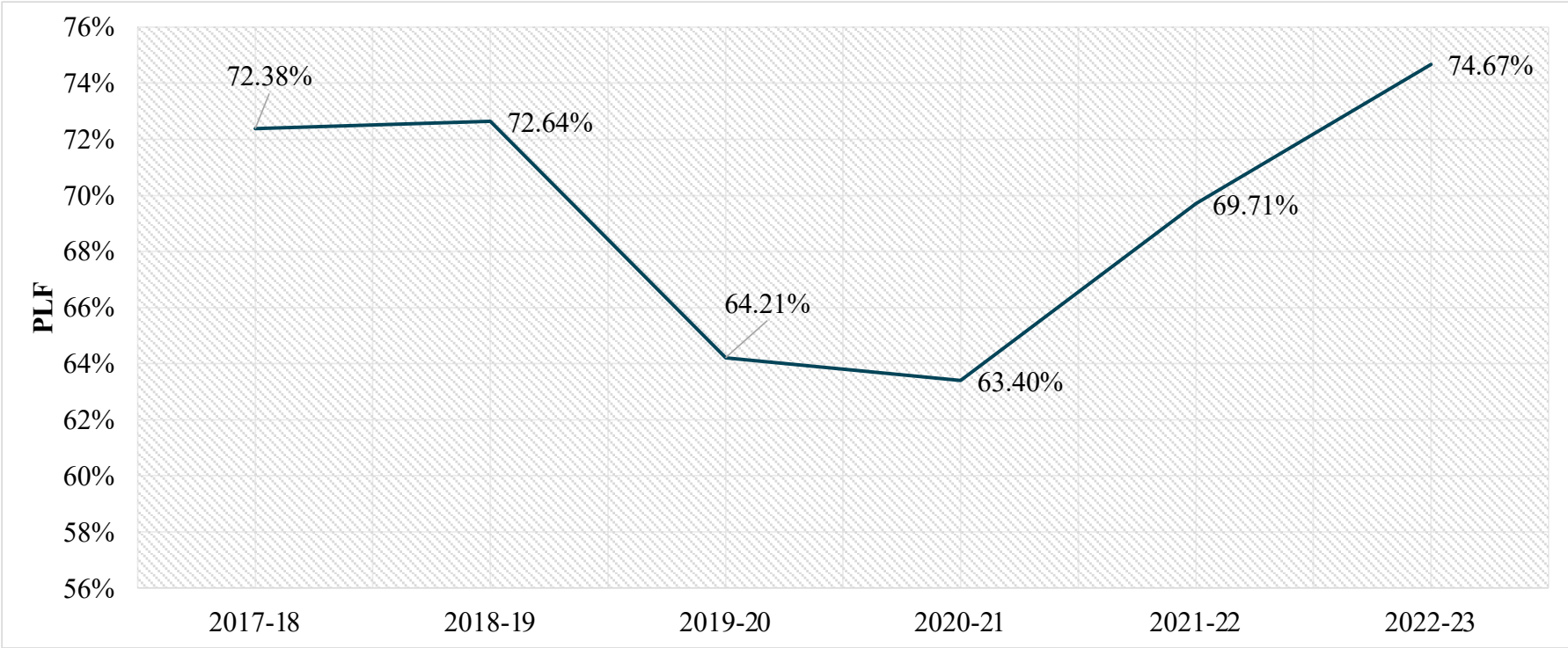
- **Differentiated Working Capital in case of Generating Stations with Integrated Mine:**

- The coal stock norms for calculation of working capital of generating stations with integrated/ captive mine should not be same as that for the pit-head or non-pit head generating stations as some of the delays in coal procurement should ideally be avoided.

Interest on Working Capital:

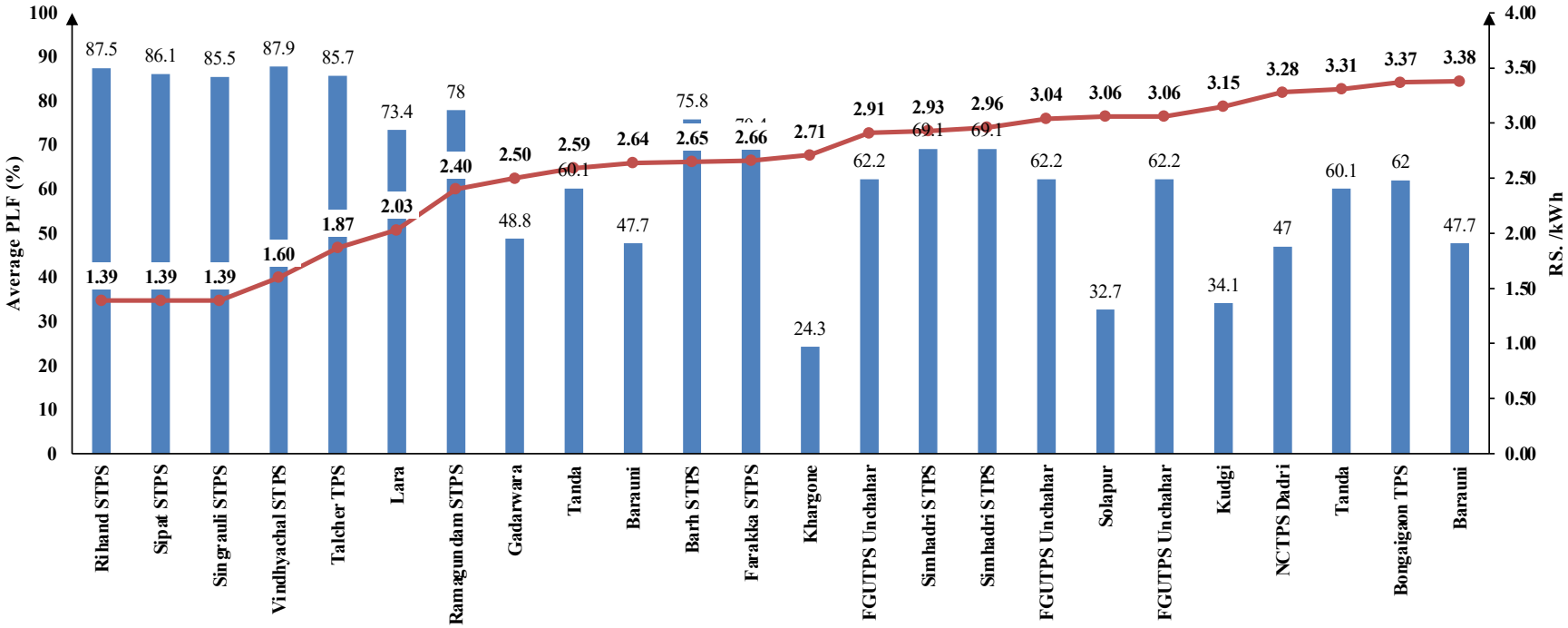
- The actual cost of interest for working capital or short-term loans are generally low and thus the rates should be reflective of the market conditions and market practices.

Average PLF of Central Thermal Stations



So: CERC Approach Paper for Tariff Regulations 2024-29

Average PLF of coal based thermal stations FY-19 to FY-23 – PLF of higher VC plants lower than the NAPAF



So: PLF – CEA; VC – CERC Annual Report: FY-22

Verification of Energy Charge Components – GCV and cost of imported fuel

Gross Calorific Value: (2nd Proviso to Clause 60)

- Third party sampling approach should be retained with allowance for pass through of cost of sampling.
- The suggested 'normative' gap in GCV (as an alternative to third party sampling) should be avoided.
- A cap for GCV gap should be specified.
- The GCV gap beyond the cap should be borne by the generators and the beneficiaries in the 2/3:1/3 ratio. This would provide incentive for the generators to enforce fuel supply contracts and plug leakages, if any.

Verification for Landed Cost of Imported Coal: (2nd Proviso to Clause 58)

- The regulation should also specify a framework for benchmarking the cost of imported coal as a upper cap.

Add on Incentives with incremental effort or improvement

The proposal for added incentive of 1% (4%) pf the monthly capacity charge for thermal (hydro) plants for Monthly Frequency Response Performance is significantly high. Further, the approach suggests incentive for a performance parameter which is expected to be ‘mandated’ aspect under the grid code.

The proposal suggests ‘incentive’ for any performance above 0% !!!

An incentive should only be provided if the actual performance is beyond 90-95% of the frequency response performance.

Incentive for Peak/Off-peak Hours

ii. Additional Incentive for Generation during Peak and Off-peak hours Clause 62(6)

- Given the current shortage situation, no extra effort will be required by the generators to achieve PLF above NPLF for most of the generating plants. Furthermore, peak hours would generally witness higher PLF thus provide low hanging fruit of incentives.
- Low ECR generating stations would also generally be able to get the incentive as their PLF all through tends to be higher.
- Incentive during peak and off-peak hours may be reduced for both thermal and hydro generating stations from the current levels.

iii. Higher incentives for plants with operational life more than 30 years Clause 70(A)(b), Clause 70(B)(b)

- Both the incentives mentioned in (i) and (ii) above will be higher as the NAPAF and NAPLF both are 80% for the plants with operational life more than 30 years.
- The regulation provides for 'arrangement' of the tariff beyond 25 years, such incentive should not be applicable in such cases.

Accountability and Data Sharing

- **Data Sharing on Calculation of Gains:** The regulation providing the gain sharing for SHR, SFC, and Aux Consumption

  Since the same is being paid to the respective generating companies and transmission licensee as the case may be, the data pertaining to actual performance vis a vis benchmark defined under these regulations should be shared by the respective RPC's for each month while billing respective beneficiaries.

- **Actual O&M Cost:** Since the norms for O&M are derived based on actual O&M expenses, month-wise O&M expenses can be reported annually by the generating companies and may be made available through Commission's website to the beneficiaries.

- Clause 5.11(h)(5) of the revised Tariff Policy, 2016 also states that "Clear guidelines and Regulations on information disclosure may be developed by the Regulatory Commissions. Section 62(2) of the Act empowers the Appropriate Commission to require licensees to furnish separate details as may be specified in respect of generation, transmission and distribution for determination of tariff. These should form the basis for EM/SOR and be also shared through the Commissions website.

Definitions - Clause 2(13)(e)

- Clause 2(13)(e): **Change in Law:** coming into force **of any existing agreement or** change in any bilateral or multilateral agreement or treaty between the Government of India and any other Sovereign Government having implications for the generating station or the transmission system regulated under these regulations.
- Clause 2(19): **Date of Operation for emission control system or Ode:** ……Director of the generating company, **provided that ODe is later than or equal to COD of the thermal generating station or unit thereof.**
- Clause 2(32)(a): **Force Majeure:**
  - It is suggested that clarification may be provided as to who will define the "statistical measures for the last hundred years" (it should be Indian Meteorological Department).
  - Clarifications when the data for last hundred year is not available.
  - Inclusion of **system wide cyber attack as force majeure event** in 2(32)(b).

Determination of Energy Charge component of tariff – Clause 8(5)

- **Existing provision:** *5) Energy charge component of the tariff ….*

Provided that the generating company shall maintain the account of the integrated mine separately and ***submit the cost of the integrated*** *mine, in accordance with these regulations, duly certified by the Auditor.;*

- **Suggestions:** 5) Energy charge component of the tariff ….

Provided that the generating company shall maintain the account of the integrated mine separately and submit the **detailed component-wise cost of the integrated** mine, in accordance with these regulations, duly certified by the Auditor.

Recovery of cost towards emission control devices ony if emission below norm – Clause 15(2) and Clause 16

- **Existing provision:** The first proviso to Clause 16 states -

Provided further that the supplementary energy charges, if any, ***on account of meeting the revised emission standards*** *in case of a thermal generating station shall be determined separately by the Commission as per Regulation 64 of these regulations.*

- **Suggestion:** It is suggested that the supplementary capacity charges as well may be approved only on **meeting of the revised emission standards** by the generating company.

- Also, the data of the actual emissions standards met by the generating company as available from the continuous emission monitoring system (to be installed if not available) should be archived and made available on the Commission's and/ or generator's website.

Application for determination of tariff for emission control system – Clause 9(3)

- **Existing provision:** *3) In case an emission control system is required to be installed in the existing generating station or unit thereof to meet the revised emission standards, an application shall be made for the determination of supplementary tariff (capacity charges or energy charge or both) based on* ***the actual capital expenditure*** *duly certified by the Auditor;*

- **Suggestions:**

3) In case an emission control system is required to be installed in the existing generating station or unit thereof to meet the revised emission standards, an application shall be made for the determination of supplementary tariff (capacity charges or energy charge or both) based on **the <u>actual capital expenditure undertaken through competitive tendering basis and</u>** duly certified by the Auditor;

Special provisions for tariff of generating stations beyond 25 years of operation from COD – Clause 17

- **Existing provision:** *In respect of a thermal generating station that has completed 25 years of operation from the date of commercial operation,* ***the generating company and the beneficiary may agree on an arrangement****, including provisions for target availability and incentive, where in addition to the energy charge, capacity charges determined under these regulations shall also be recovered based on scheduled generation.*
- **Suggestion:** The EA provides for procurement of electricity u/s. 62 or u/s. 63 and hence, the tariff of such generators shall be determined under the provisions of these Regulations. The above Clause suggests "an arrangement" between the generating company and the beneficiary thus leaving it out of the purview of the Commission. Absence of any guideline or framework may lead to legal complications associated with such 'arrangements'.
-

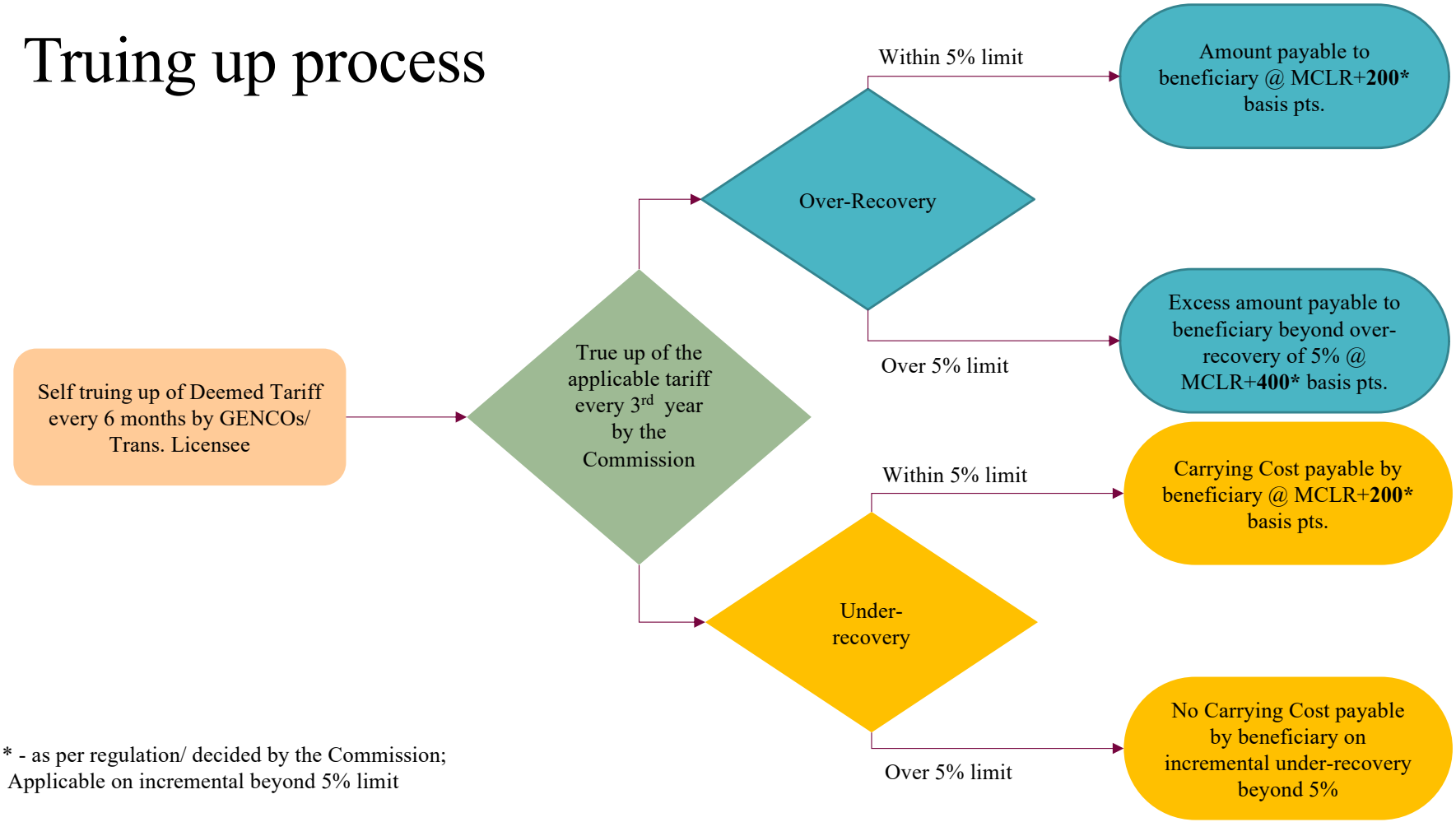
R&M for projects beyond useful life – Regulatory Certainty

- Special Allowance for R&M expenses, once initiated, post completion of useful life of a project shall be assured for 10-15 years. System made available after completion of R&M works, needs to be certified for extended life (of at least 15 years) by CEA with information to the beneficiaries and RLDCs.
- The project will not be eligible for separate R&M expenses.
- Trajectory of the performance parameters to be specified by the Commission.
- Continuity of the special allowance will only be subject to demonstration of specified/ improved operational parameters on pro-rata basis and will be trued up every 3 years. If improvement is not demonstrated, the special allowance will be disallowed.
- The recovery of interest on loan and O&M expenses to be allowed during the downtime of the system for R&M.
- No depreciation to be allowed for any asset created through special allowance.

Suggested Innovative Approaches for Tariff Regulation

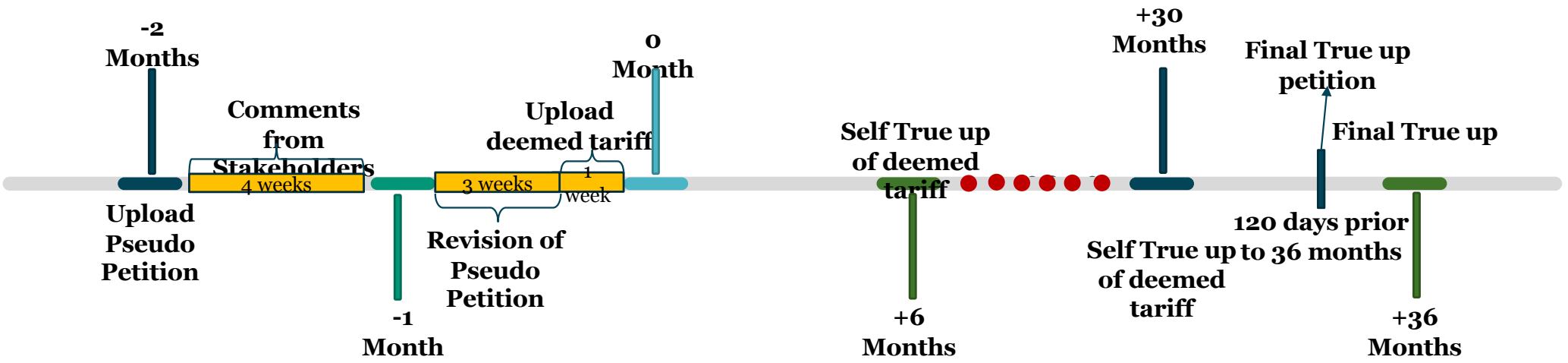
- **Pseudo-Petitions till Final True up** – An interim 'true-up' can be self implemented but he regulated entities based on the tariff template provided in advance by the Commission. These can be trued up once in the mid of the control period and then after the end of the control period thus significantly reducing the regulatory burde for the regulated entities as well as the Commission.
- **'Deemed approval till trued up approach'** may be adopted under a **Regulatory Sandbox Approach** for selected transmission assets/type of assets central sector entities
- **Regulatory Impact Assessment (RIA)** - The regulatory framework for tariff determination should also provide a framework for impact assessment of the changes on the regulated tariff components. This would enable the beneficiaries and the final consumers to understand the impact of changes and also enable the Commission to develop a balanced approach for the regulated entities.

Truing up process

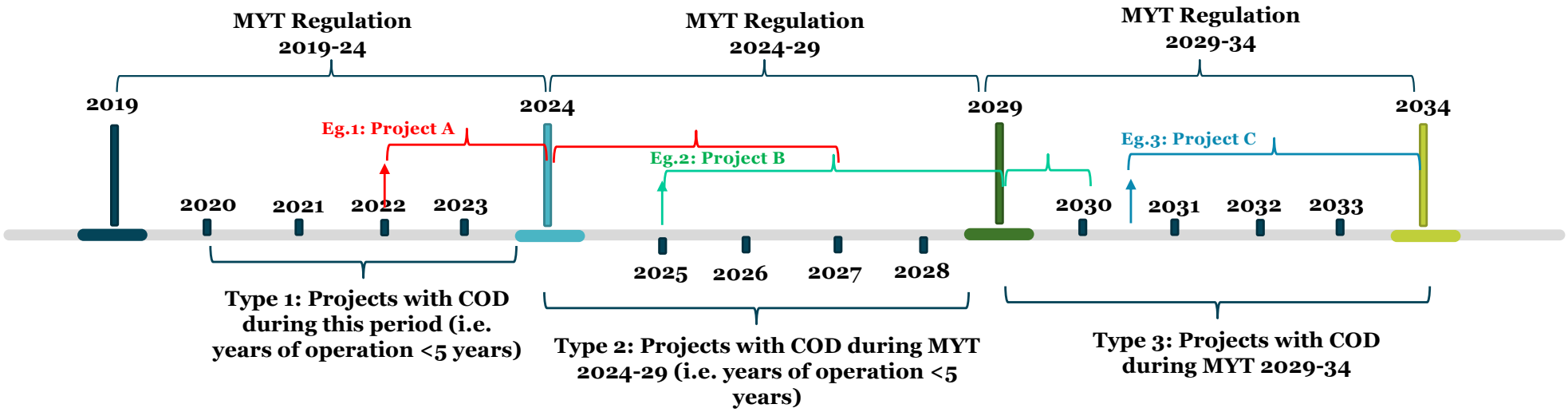


* - as per regulation/ decided by the Commission;
Applicable on incremental beyond 5% limit

Timeline of Pseudo-Petitions till Final True up

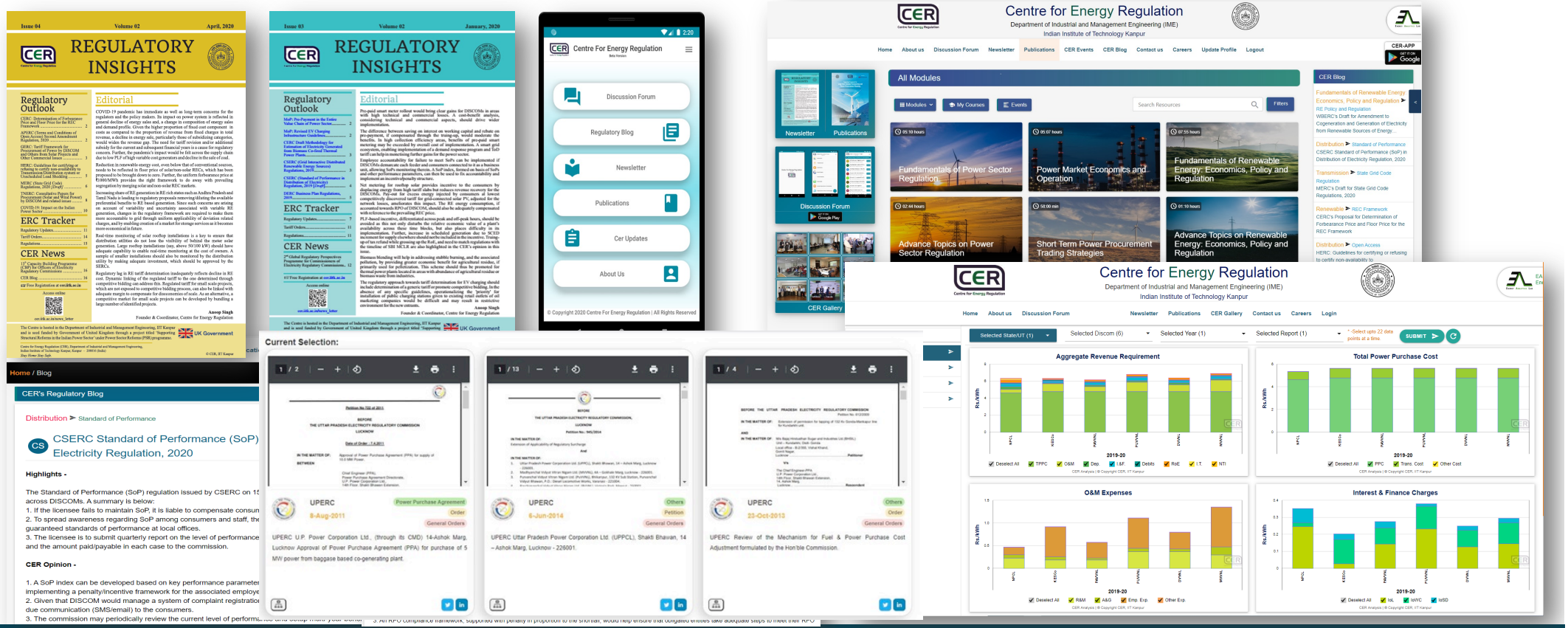


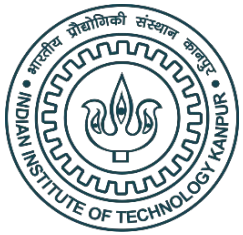
Types of Projects based on COD



Note: Projects will be regulated by the regulations existing during a particular MYT control period

Centre for Energy Regulation – Contributions to Regulatory and Policymaking Process





Thank You

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