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REGULATORY INSIGHTS

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Editorial

The ability of a distribution utility to absorb an increasing share of Renewable Energy (RE) sources is significantly influenced by grid flexibility and, its financial as well as operational implications. While the nation may have a single target to decarbonise the Indian power sector through greater RE penetration, sufficient room should be available to the states to adopt such targets as per local RE resources, consumer mix as well as transmission infrastructure. The provisions for the energy open access under the proposed Rules, especially those with reference to the applicability of cross subsidy surcharge need to be reviewed in the provisions of the Electricity Act 2003.

While setting long-term consolidated RPO targets, sufficient flexibility should be available to the obligated entities to achieve the same through solar, non-solar, hydroelectric or other renewable/nonconventional resources. This will enable them to minimise the overall cost of compliance, leading to lower financial implications for the consumers, while still being able to achieve the overall decarbonisation objective.

As suggested multiple times, since the inception of the Renewable Energy Certificates (REC) market, a multiplier scheme should be adopted to provide substitutability between the solar and non-solar RECs, and the ESCerts. Furthermore, the scope of the REC market can be further expanded by including hydro certificates, green hydrogen certificates etc., under a similar multiplier scheme, to be launched in the near future. In the absence of such certificates, the efficacy as well as economic efficiency of implementing the hydropower obligations (HPO) or the green hydrogen obligations (GHO) would be undermined.

Centre for Energy Regulation (CER) has been regularly engaged in providing inputs on the proposed policy and regulatory initiatives across the power/energy sector in the country. Based on its own analysis, CER proposed number of changes in the multi-year tariff (MYT) regulations implemented across states. We are encouraged to note that numerous novel suggestions have found a place in the amended and implemented regulations across several states. An important feature of such inputs is to adopt incentive-based approach for approving various cost components, and to ensure that the regulated entities strive to achieve better operational and financial performance.

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UK Government

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Draft Electricity (Promoting Renewable Energy through Green Energy Open Access) Rules, 2021

The Ministry of Power issued the draft Electricity (Promoting Renewable Energy through Green Energy Open Access) Rules, 2021 on 16th August, 2021. The key highlights are mentioned below:

- **Applicability:** This rule will be pertinent to green energy purchase and consumption including energy generated via Waste-to-Energy plant.
- **Renewable Purchase Obligation (RPO):** There will be uniform RPO for all obligated entities (*i.e.*, the distribution licensees, open access and captive power consumers). Non-obligated entity may also opt to purchase and consume Renewable Energy (RE) as per their requirements by below mentioned methods:
  - Own Generation from RE sources – There is no capacity limit for installation of RE power plants behind the meter. Distribution licensee will not be liable to purchase such energy. The entity/developer with whom the entity has medium/long-term PPA may set up the RE plant.
  - By procuring RE *via* Open Access from any developer with whom the entity enters into an agreement.
  - By requisition from the distribution licensee –
    - Any entity may opt to purchase green energy either a certain percentage of the consumption or its entire consumption and can place a requisition for this with their distribution licensee, which shall procure such quantity of green energy and supply it.
    - Green energy can be purchased against RPO on consumption from a captive power plant or energy availed through open access from sources other than RE sources.
    - Consumer may purchase a larger quantity/share of RE than he is obligated to do on voluntary basis. For easier implementation, this may be a minimum 50% of the consumption from green energy, which can be up to 100% in step of 25%.
    - An appropriate Commission will determine the green energy tariff that consists of average pooled power purchase cost of the RE, cross-subsidy and service charges covering all the prudent costs of the distribution licensee for providing the green energy.
    - Distribution licensee shall requisite for green energy for a minimum period of one year.
  - Purchase of Renewable Energy Certificates (RECs) to meet the RPO.
  - Purchase of Green Hydrogen – The obligated entity, including the industries, can also purchase green hydrogen (hydrogen produced using electricity from RE sources) to meet their RPO. The green hydrogen quantum would be evaluated by considering the equivalence to the green hydrogen produced from 1 MWh of electricity from RE sources or its multiple.
- **Green Energy Open Access:** The appropriate Commission shall prepare regulations in line with this Rule to provide Green Energy Open Access to consumers who want to use it. The Consumers, except captive consumers, having contracted demand/sanctioned load of 100 kW and above shall be eligible to take power through green energy open access.

  The reasonable conditions such as the minimum number of time blocks for which the consumer shall not change the quantum of power consumed through open access may be imposed so as to avoid high variation in demand to be met by the distribution licensee.
- **Banking:** Banking may be allowed on a monthly basis on payment of charges to compensate additional costs to the distribution licensee incurred by the Banking. The amount of banked energy by Green Energy Open Access consumers should not exceed 10% of the Consumers' total yearly energy consumption from the distribution licensee.
- **Cross Subsidy Surcharge:** Cross Subsidy Surcharge and Additional Surcharge shall not be applicable for power that is produced from the Waste-to-Energy plant. The surcharge for Green Energy Open Access consumers purchasing green energy from a generating plant using RE sources shall not be increased during 12 years from the date of commissioning of the generating plant by more than 50% of the surcharge fixed for the year in which open access is granted. The rating/labelling of the consumer will be based on the percentage of green energy purchased from the distribution licensee.

CER Opinion

Renewable Purchase Obligation (Rule 4): Ability of a distribution utility to absorb increasing share of renewable energy sources is influenced by grid flexibility and, its financial as well as operational implications. While implementing a single target to decarbonise the Indian power sector, sufficient flexibility should be available to the states to adapt such targets as per local availability of resources, the consumer mix as well as transmission capacity. However, it needs to be clarified whether the uniformity of RPO on obligated entities is across the country or across these three sets of obligated entities within a state.

Defining 'Behind the meter' Generation Sources (Rule 4): Rule (4.2 (A)) provides the definition of 'Behind the meter' as *"the electricity generated for their own use and not for injection of such power into the electricity grid"*. In case of a captive power plant is not located on the premises of a consumer, 'injection' of power into the grid would be required for their own use. This should be reflected in the proposed definition.

Components of Tariff for Green Energy (Rule (4.2 (C))): Rule (4.2 ((C) (d))) provides for the delineation of tariff determined by the appropriate Commission. The identified components herein should not limit the respective Commission from including other additional components towards the determination of tariff for green energy. For example, the cost of purchase of RECs, network charges, application of network losses, etc.

Designing a Product for Green Energy (Rule 4): A green product to be offered by a distribution licensee would generally be defined as a percentage of part of the product portfolio *Singh (2009)*[1] . Furthermore, it may not be possible for a consumer to forecast a required quantum of energy for the coming year. Thus, the distribution licensee should be informed of the intent of consumer in purchasing a green electricity product with certain proportion of RE. The consumer would have appropriately informed the utility of the expected demand for green energy, by choosing a particular green energy product (say, 100% green, 50% green, etc.).

Pre-Specification of Advance Quantum of Green Energy (Rule (4.2 (C))): Rule (4.2 ((C) (e))) states that *"The quantum of green energy shall be pre-specified for at least one year"*. Considering the above-mentioned comment, such pre-specification of green energy quantum would not be required.

Green Energy Open Access (Rule 5): As per the draft Rule, contracted demand/sanctioned load of large consumers is given in 100 kW and above. The contracted demand/sanctioned load for large consumers is generally specified in kVA and should be incorporated so. Furthermore, the proviso regarding minimum number of time blocks should be modified as the 'minimum number of continuous time blocks for which the consumer shall not change the quantum of power consumed' (emphasis added).

Banking of Green Energy (Rule 8.1): According to Rule 8.1 *"Banking may be permitted on monthly basis on payment of charges to compensate additional costs, if any, to the distribution licensee by the Banking. The appropriate Commission shall fix the applicable charges"*. It is suggested that the Time of Day (TOD) based banking and withdrawal of green energy should be provided for Green Energy Open Access consumers.

Cross Subsidy Surcharge (Rule 9): The first proviso to Rule 9 (a) is not in line with second proviso to 38 & 39 (2) (d) and 40 (c) of the Electricity Act 2003. The later clearly provides for progressive reduction in cross subsidy surcharge. Furthermore, the 50% limit for potential increase in cross subsidy surcharge over a 12 year period may not be in line with the provisions of tariff policy.

$$x_{t=12} \leq 1.5 x_{t=1} \quad (1)$$

where x_t is the Cross Subsidy Surcharge for t^{th} year.

A new proviso may be added just after the above-mentioned proviso: 'Provided that the Cross Subsidy Surcharge may not exceed the limit prescribed in the prevailing tariff policy'.

$$x_t \leq 20\% \; of \; ACoS \quad (2)$$

Clearly, the above proviso is not in line with the tariff policy and needs to be modified accordingly.

Applicability of Additional Surcharge (Rule 9 (a)): The second proviso to Rule 9 (a) needs to be modified as - the applicability of additional surcharge as laid down in the Electricity Act 2003 refers to the assets stranded because of the consumer seeking open access. It is important to highlight that these provisions of the Act would likely prevail over the 'non-applicability of additional surcharge' as prescribed in these Rules.

[1]Singh A. 2009. A market for renewable energy credits in the Indian power sector, Renewable and Sustainable Energy Reviews; 13(3): 643-652. https://doi.org/10.1016/j.rser.2007.10.011

Cross Subsidy Surcharge and Additional Surcharge for Waste-to-Energy (Rule 9 (a)): As per the third proviso to Rule 9 (a) *"Cross Subsidy Surcharge and Additional Surcharge shall not be applicable in case power produced from a Waste-to-Energy plant is supplied to the open access consumer"*. It needs to be clarified whether Waste-to-Energy plants include those based on agricultural waste or municipal waste, or both. Moreover, instead of providing exemption of Cross Subsidy Surcharge to Waste-to Energy plants, it will be economically efficient to provide additional support for the electricity generation from Waste-to Energy plants. This will avoid the asymmetric treatment of technology-based Cross Subsidy Surcharge.

Green Certificate (Rule 10): *Singh (2009)*[1] and *Singh (2010)*[2] proposed merger of an Energy Efficiency Certificate (ESCerts) scheme that may be launched in future (This was later launched under the PAT scheme) with the suggested REC market. Given the common decarbonisation attribute of the RECs and the ESCerts, merger of the later market in the former would provide numerous benefits for both. This would not only enhance the overall cost-effectiveness of the cost of compliance by the obligated entities (for RPO as well as energy efficiency target under the respective framework) but also enhance the footprint of the REC + ESCerts market, providing missing liquidity and efficiency to the ESCerts market.

Allocation of RECs to Consumers Buying Green Energy (Rule 10): The consumers should not be required to request the distribution licensee for the green certificate. It should be an automatic process to provide green certificates to the consumers. Either a value attributable to RECs may be adjusted to the consumer's bill, or the same may be available for sale by the consumer through an intermediary.

RERC (Renewable Energy Obligation) (Seventh Amendment) Regulations, 2021 [Draft]

RERC has issued the draft RERC (Renewable Energy Obligation) (Seventh Amendment) Regulations, 2021 on August 2021. The key highlights of the draft are as below:-

- Hydro Power Obligation (HPO) is met with power from Large Hydro Power (LHP) projects, including pump storage projects with capacity greater than 25 MW, commissioned between 8th March 2019 and 31st March 2030, w.r.t 70% of total generated capacity for 12 years from the date of commissioning. **(Regulation (3) (a))**
- Free power from LHPs will be provided as per agreement with the State. Power for Local Area Development Fund (LADF) is not included in the 70% of total generated capacity limit. **(Regulation (3) (a))**
- To meet HPO liability, free power provided by LHPs can be used, excluding power used for LADF contribution, if consumed within the State.
- HPO benefit is eligible for free power (excluding LADF contribution), up to the HPO liability of State/DISCOMs. **(Regulation (3) (b))**
- Imported Hydro Power from foreign nations is not eligible for HPO. **(Regulation (3) (c))**
- After 80% and more Solar/ Non-Solar RPO/ HPO target is met, the remaining shortfall, if any, may be met by excess procurement of Non-Solar/ Solar or Hydro Energy/ Solar or Non-Solar Energy, respectively, consumed beyond the specified Solar, Non-Solar RPO and HPO targets for the particular year. **(Regulation (3) (d))**

Percentage of RPO targets (Regulation (3))

Sl. No.	Year	Non-solar (%)			Solar (%)	Total (%)
		Wind (%)	Biomass (%)	HPO (%)		
1.	2021-22	8.90	0.90	0.18	8.50	18.48
2.	2022-23	9.10	1.00	0.35	9.50	19.95
3.	2023-24	9.40	1.10	0.66	10.50	21.66

Note: RPO expressed as a percentage of energy consumption (%) excluding consumption met from hydro sources of power.

[2]Singh, A. 2010. "Economics, Regulation and Implementation Strategy for Renewable Energy Certificates in India" in India Infrastructure Report 2010, Oxford Univ. Press. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3440253

CER Opinion

Technology Neutral RPO: The whole idea of differentiating Solar and Non-solar RPO is economically unjustified; it leads to economically inefficient decisions for investment. The cost of procurement from solar power plants has been on a decline, and is now even less than other RES. It would be appropriate to dispense with technology-wise RPO differentiation as Solar and Non-solar RPO. This would reduce the overall cost of compliance for the obligated entities[3].

Definition of RPO obligation: Section 86 (e) of Electricity Act 2003 states, *"promote co-generation and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of total consumption of electricity in the area of a distribution licensee"*. This section empowers the SERCs to specify purchase of electricity from RE sources. It is noted that the RPO in the draft regulations, defines the same *w.r.t.* the consumption of electricity excluding those from HPO; as such, it does not seem to be in line with the above provisions of the Act.

Hydro Power Obligation Targets (Regulation 2(3)): As per draft Regulation, the HPO targets have been incorporated in the existing RPO target structure. According to the current practice adopted by the Commission, when more number of technologies will be incorporated in the pool of RPO, then the total RPO target will rise again in future.

It is important to emphasize that the HPO targets are an add-on obligation over and above the existing RPO from other RE sources. Given that the DISCOMs are obligated to meet the existing level of RPO, it is important that a study be undertaken to assess the ability of Rajasthan's Grid to absorb various levels of RPO in the future and fix the targets appropriately[4]. To ensure that the estimated target may be further enhanced by the Commission to promote consumption of RE sources in the state of Rajasthan.

In the current framework, there is a lack of scientific basis to estimate the target of RPO obligation that is fixed for the obligated entities (DISCOMs, Open Access Consumers, and Captive Consumption). Therefore, it is suggested that the determination of total RPO target should be based on a scientific study[4], as there is a requirement for techno-economic analysis, binding to an economical limit that comes from the supply curve / function[5] . Thus, the overall limit should not be based on number of technologies that are being incorporated; all technologies that might be incorporated in the future could be accommodated by adjusting the others so that total RPO target should remain the same.

In order to ensure economic efficiency, it is important to specify an overall target for RPO and allow the obligated entities to procure RE from alternate technologies based on their relative economics. Separate categorization and specification of targets for specific technologies, add rigidity in the decision making of the DISCOMs, and also increase the overall cost of obligation.

Market Design: The DISCOMs in Rajasthan already procured hydroelectricity (Table 30: Energy Availability (MU) and Cost (Rupees in Cr.) for FY 2019-20)[6] which is over and above the targets proposed in the draft regulation. It is also important to highlight that other obligated entities, for example, Open Access Consumers and Captive Consumers, may not have access to hydro power in a similar manner especially, due to the absence of any market-specific for procurement of hydroelectricity. For example, the market for RECs and GTAM enables the obligated entities to specifically procure renewable power so as to meet their obligation. The competitive platform like power exchanges (DAM, TAM, etc.) does not offer the choice of source of electricity and hence will not help these obligated entities, which exclude the DISCOMs, to procure hydroelectricity to meet their obligation. Such entities will, in-turn, have to procure the hydroelectricity through bilateral arrangement or though traders, which may not be as cost-effective as the competitive platform. Furthermore, the absence of any certificate market for hydro power also does not enable such entities to procure such certificates to meet their HPO obligation. It is suggested that if HPO is also included as a qualifying technology for crediting the REC, the same would be available to the obligated entities to meet their obligation in a cost-effective manner.

[3]Anoop Singh (2009), "A market for renewable energy credits in the Indian power sector", Renewable and Sustainable Energy Reviews 13 (3), 643-652. See https://www.researchgate.net/profile/Anoop-Singh-28

[4]Anoop Singh (2011), "Directions for Effective Regulation for Renewable Energy: An Analysis of Renewable Energy Certificates", India Energy Security Summit: Energy Security for a sustainable future, IPPAI. See http://dx.doi.org/10.2139/ssrn.3440341

[5]Anoop Singh (2010), "Economics, Regulation, and Implementation Strategy for Renewable Energy Certificates in India", India Infrastructure Report 2010, Oxford Univ. Press. See https://ssrn.com/abstract=3440253

[6]Please refer to Tariff Order 06.02.2020 in the matter of ARR & Tariff for FY 2019-20. See https://energy.rajasthan.gov.in/content/raj/energy-department/en/departments/avvnl/news/TARIFF_ORDER_06-02-2020_IN_THE_MATTER_OF_ARR_and_TARIFF_FOR_FY_2019-20.html#

The DISCOMs in Rajasthan are already procuring significantly higher hydro power than the obligation proposed in the draft regulation (Regulation 2 (3)): As per the draft regulation, HPO targets for Rajasthan is 0.18%, 0.35% and 0.66% for 2021-22, 2022-23 and 2023-24, respectively. It is observed from Rajasthan 2019-20 tariff order that Rajasthan procures 6.14% hydro power already[6].

In the absence of any separate market for hydro power, or the certificates associated with it, the DISCOMs in Rajasthan will not be able to 'offload' the excess HPO to such market mechanisms.

CSERC (Terms and Conditions for Determination of Tariff According to Multi-Year Tariff Principles and Methodology and Procedure for Determination of Expected Revenue from Tariff and Charges) Regulations, 2021 [Draft]

Chhattisgarh State Electricity Regulatory Commission (CSERC) released draft (Terms and Conditions for determination of tariff according to Multi-Year Tariff principles and Methodology and Procedure for determination of Expected revenue from Tariff and Charges) Regulations, 2021 based on the objections/suggestions/comments received on the Draft MYT Regulations, 2020. The important highlights of this draft regulation are given below:

- General principles listed in the Regulation are shown below:

Control Period	FY 2022-23 to FY 2024-25
Capital Investment Plan	Approval for entire control period to be determined before start of control period
Mid-Term Review	No such provision (due to 3 years control period)
Determination of Tariff	Each year of control period
Truing up	Preceding year prior to commencement of next control period
Pass Through of gains or losses on account of uncontrollable factors	Net gains/losses passed on to beneficiaries/consumers through next ARR
Sharing of gains or losses for efficiency linked controllable items	Net Gain: **2:1** (Beneficiary/Consumer(s) : Licensee) Net Loss: **1:1** (Beneficiary/Consumer(s) : Licensee)
Sharing of gains on account of over achievement of target set for energy losses	**1:1** (Beneficiary/Consumer(s) : Licensee)

Financial Principles:

- **Return on Equity (Regulation 23):**
  - 14% for Generation, Transmission & SLDC
  - 16% for Distribution
  - Grossed up by MAT rate
  - Rate of pre-tax RoE = Base Rate / (1- MAT Rate)
- **Depreciation (Regulation 25):**
  - Value Base = Capital Cost of the asset
  - Straight Line Method
  - Depreciation on new assets will be charged on day-wise pro-rata basis during the first year of the COD of the asset
- **Working Capital (Regulation 26):**
  - For Coal-based Generating Stations:
    - Cost of coal – 10 days (pit-head), 20 days (non-pit-head)
    - Cost of secondary fuel oil for one month
    - Maintenance & General expenses for 15 days
    - Maintenance spares @ 20% of O&M Expenses (in case of new generating stations: % of opening GFA)
    - Receivables equivalent to 1 month of capacity charges & energy charges

- Transmission:
  - Maintenance & General expenses for 15 days
  - Maintenance spares @ 20% of O&M Expenses
  - Receivables equivalent to 1 month of fixed cost
- Distribution Wheeling:
  - Maintenance & General Expenses for 15 days
  - Maintenance spares @ 20% of O&M Expenses
  - One month equivalent of the revenue from charges for use of Distribution wires at prevailing tariffs
- Retail Supply:
  - Maintenance & General Expenses for 15 days
  - Maintenance spares @ 20% of O&M Expenses
  - Receivables equivalent to 1 month of the revenue from sale of electricity at the prevailing tariffs

❖ **Interest on Working Capital (Regulation 26):** SBI MCLR (one year tenure) + 200 bps (prevailing on 30th September of current FY).

❖ **O&M Expenses (Regulation 40.5, 73.5, 84.4, 93.6, 102.5):**

- **Human Resource Expenses:**
  - Employee Costs
  - Impact of Pay revision
  - Manpower deployed on outsourcing basis
  - Consideration of CPI (IW) for normalisation of Employee Cost
- **Maintenance & General Expenses:**
  - A&G Expenses
  - R&M Expenses
  - Consideration of WPI for normalisation of A&G and R&M Expenses
  - Base year M&G expenses for FY 2022-23 considered at 51% of O&M expenses allowed in the CERC (Terms & Conditions of Tariff) Regulation, 2019 & projections at escalation of 3.5% for the remaining year of the control period

❖ **Non-tariff Income (Regulation 41, 73.7, 84.6, 95):**

- Disposal of assets
- Income from investments, rents
- Disposed value of scrap/assets after adjusting its depreciated value
- Rental income for using assets which includes receipts against advertisements
- Interest on advances to suppliers/contractors

❖ **Income from Other Business (Generation) (Regulation 42):**

- 2/3rd of the income from will be deducted from the Aggregate Revenue Requirement
- 1/3rd of the income from such other business shall be retained by generator

❖ **Allocation Matrix (Distribution Wheeling Business) (Regulation 81):**

Particulars	Distribution Wheeling Business (%)	Retail Supply Business (%)
Power Purchase Expenses	-	100
Inter-State Transmission Charges	-	100
Intra-State Transmission Charges	-	100
Operation & Maintenance Expenses:		
Human Resource Expenses	65	35
Maintenance & General Expenses:		
Repair & Maintenance Expenses	**90**	**10**
Administrative and General Expenses	90	10
Depreciation	90	10
Interest on Long-term Loan Capital	90	10
Interest on Working Capital	10	90
Contribution to Pension and Gratuity Fund	65	35
Provision for bad and doubtful debts	10	90
Return on Equity	90	10
Income Tax	90	10

❖ A new chapter **Determination of Input Price of Coal and Lignite from Integrated Mine** is added (Chapter 5).

❖ **Determination of Input Price of Coal and Lignite from Integrated Mine:**

- Input Price of coal and lignite for energy charges:
  - Determined by the Commission, before that, price will be adopted from the notified price of Coal India Limited commensurate with the grade of the coal from the integrated mine
  - Input price of coal from the integrated mine(s) will be trued up yearly

Input Price of Coal = Run of Mine (ROM) Cost + Additional Charges;

1. Run of Mine Cost components & calculations (Regulation 53):

i. When allocated through auction mode:

ROM Cost = Quoted Price of Coal + Fixed Reserve Price

where,

a. Quoted Price of coal is the Final Price Offer of coal in respect of the concerned coal block or mine, along with subsequent escalation, if any, as provided in the Coal Mine Development and Production Agreement

b. Fixed Reserve Price is the fixed reserve price per tonne along with subsequent escalation, if any, as provided in the Coal Mine Development and Production Agreement

ii. When allocated through allotment route:

ROM Cost = [(Annual Extraction Cost / Annual Target Quantity) + Mining Charge] + (Fixed Reserve Price)

where,

a. Annual Extraction Cost is the cost of extraction of coal as computed in accordance with Regulation 36F of these regulations

b. Mining Charge is the charge per tonne of coal paid by the generating company to the Mine Developer and Operator engaged by the generating company for mining, wherever applicable

c. Fixed Reserve Price is the fixed reserve price per tonne along with subsequent escalation, if any, as provided in the Coal Mine Development and Production Agreement

2. Additional Charges components & calculations (Regulation 54):

i. Crushing Charges = Annual Crushing Cost / Quantity

ii. Transportation Charges = Annual Transportation Cost / Quantity

iii. Handling charges = Annual Handling Cost / Quantity; and

iv. Washing Charges = Annual Washing Cost / Quantity

CER Opinion

We are pleased to note that several inputs given on the previous draft of the regulations have been incorporated in this revised draft[7]. Some important ones are highlighted here along with the additional ones for consideration.

Efficiency Factor in MYT Regulation:

It is proposed to incorporate appropriate efficiency parameters in tariff as an incentive measure to encourage continual improvement across cost components. For example, the current practice of approving norm-based O&M Expenses adjusted by the appropriate price index should also incorporate as explained below:

$$O\&M_t = O\&M_{t-1} \times \left(1 + \frac{\text{Price Index}_t}{\text{Price Index}_{t-1}} - X_t^{O\&M}\right)$$

where,

O&M: O&M expenditure norm

Price Index: Consumer Price Index for Industrial Workers (Base year - 2016)

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

Determining the X-factor:

Appropriate bench-marking studies (for example, Data Envelopment Analysis) should be conducted to set benchmark for efficiency improvement across individual 'controllable' cost parameters across the MYT control period. Since, such studies take time, it is suggested that the regulation may incorporate the above suggested approach in principle, and specify a conservative factor keeping in view the actual norm set by the other ERCs. The X-factor should be linked to a target level of identified efficiency index. Such an index may be based on availability for generation and transmission and reliability of electricity supply to consumers (Example - SAIDI/SAIFI).

An alternate approach may be adopted wherein norm for individual controllable and partially controllable cost parameters such as Employee cost, R&M and A&G. It is advisable that a trajectory for efficiency factor should ideally be provided in advance for each year of the MYT control period.

Return on Equity (Regulation 23.3):

As Capital Asset Pricing Model (CAPM), often used for calculating return on equity, provides an estimate of post-tax RoE that should not be grossed up by the rate of effective tax. Adoption of such an approach across the sector is erroneous and provides excess return. This places additional burden on tariff paid by the consumers.

A recent study at CER, IITK, using CAPM and multi-factor models, using a comprehensive data for over 125 infrastructure companies between 1998-2018, estimates the cost of equity for conventional generation sector to range between 12.86-16.52%, on a post-tax basis, refer Figure 1 below.

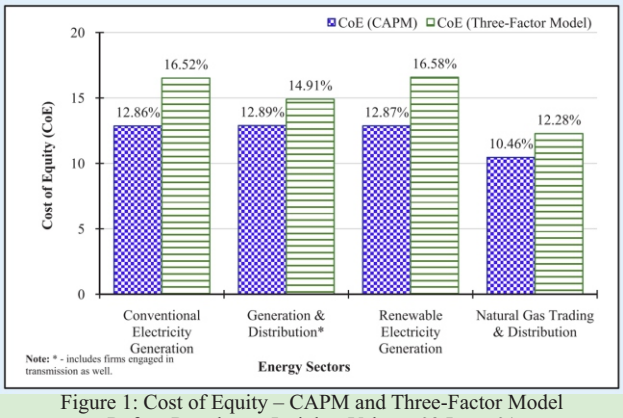


Figure 1: Cost of Equity – CAPM and Three-Factor Model
Refer: Regulatory Insight - Volume 03 Issue 01

Pre- or Post-tax RoE?: As per Section 23.1 of the draft regulation, "Return on equity shall be computed on pre-tax basis in accordance with Regulation 23.2 and to be grossed up as per Regulation 23.3". Given that the above-mentioned return is being grossed up by the effective rate of tax, it should be called a post-tax RoE instead.

[7]For further details and comments given herein, refer to CER's 1st Regulatory Manthan on Developing A Multi-year Tariff framework: Insights and Discussion on the Draft Regulation of Gujarat and Chhattisgarh (https://cer.iitk.ac.in/RM/rm1) and CER's Newsletter Volume 03 Issue 03. (https://cer.iitk.ac.in/newsletters/regulatory_insights/Volume03_Issue03.pdf#page=4)

- **Working Capital (Regulation 26):** It needs to be clarified that Maintenance & General expense also includes expenditure towards consumption of maintenance spares; if so, then the maintenance spares at 20% of O&M expenses should be excluded from the definition of working capital to avoid double counting.
- **Applicability of NAPAF & NAPLF beyond the MYT Control Period (Regulation 43.1 & 43.2):** The proposed regulations are applicable till 2024-25. Therefore, referring to the NAPAF & NAPLF for HTPS up to 2026-27 is not desirable.
- **Relaxation in Gross Station Heat Rate of 500 MW Series Plants (Regulation 43.3):** The reason for proposing higher norms for 500 MW series plants (2390 kcal/kWh) on account of gross station heat rate in the draft regulation, as these plants are efficient than 300 MW series plants, needs to be clarified.
- **Upper limit for Input Coal Price (Regulation 49):** It is suggested that in the case of integrated mine(s), the input coal price determined by the Commission should be limited to the lower of market price or the FOB price (excluding all taxes & levies) at Coal India Limited for the equivalent grade. This would ensure that the mine operator adopts efficient and cost-effective practices for various mining operations.

  Chapter 5 of the draft regulation refers to Regulation 36D, 36E, 36F, 46.2, and 46.3. These regulations are not included in the draft regulations, and hence need to be appropriately incorporated and referred.

Review of the Benchmark Capital Cost for Solar PV, Solar Thermal and Grid Interactive Rooftop & Small Solar PV Plants to be applicable for FY 2021-22 and onwards till reviewed/revised by the UERC

Uttarakhand Electricity Regulatory Commission (UERC) reviewed the "Benchmark Capital Cost for Solar PV, Solar Thermal and Grid Interactive Rooftop & Small Solar PV Plants to be applicable for FY 2021-22 and onwards till reviewed/revised by the UERC" on 30th July, 2021. The key points are given below:

- The normative capital cost for Solar PV, Solar Thermal and Grid Interactive Rooftop & Small Solar PV Plants is inclusive of all capital works including plant and machinery, civil works, erection and commissioning, financing and interest during construction, etc., and evacuation infrastructure upto the interconnection point.
- The proposed generic tariffs for Solar PV, Solar Thermal and Grid connected Rooftop & Small Solar PV Plants shall be applicable on the projects commissioned on or after 1st April, 2021 and shall continue to be applicable till further reviewed by the Commission. Also, the tariffs determined shall be the ceiling tariffs and procurement of power shall be done through competitive bidding route by distribution licensee.
- The Commission kept the benchmark Capital Cost as ₹1200 Lakh/MW for Solar Thermal Projects to be commissioned on or after 1st April, 2021.

Benchmark Capital Cost of Solar PV Project Approved for FY 2019-20 and proposed for FY 2021-22:

Sl. No.	Particulars	Approved Capital Cost for FY 2019-20 (₹Lakh/MW)	% of Total Cost	Proposed Capital Cost for FY 2021-22 (₹Lakh/MW)	% of Total Cost
1.	PV Modules	224.85	63.11	193.631	60.14
2.	Land Cost	50.00	14.03	50.00	15.53
3.	Civil and General Works	14.22	3.99	13.93	4.33
4.	Mounting Structures	14.93	4.19	14.62	4.54
5.	Power Conditioning Unit	14.93	4.19	14.62	4.54
6.	Evacuation cost upto interconnection point (Cables and Transformers)	18.77	5.27	18.38	5.71
7.	Preliminary & Pre-operative expenses including IDC & contingency, etc.	18.57	5.21	16.78	5.21
Total Capital Cost		**356.27**	**100.00**	**321.96**	**100.00**

Benchmark Capital Cost of Grid Interactive Rooftop & Small Solar PV Plants Approved for FY 2019-20 *vis-a-vis* proposed for FY 2021-22:

Sl. No.	Particulars	FY 2019-20 Approved Capital Cost (₹/kWh)				FY 2021-22 Proposed Capital Cost (₹/kWh)			
		Upto 10 kW	>10 kW to 100 kW	>100 kW to 500 kW	>500 kW & upto 1 MW	Upto 10 kW	>10 kW to 100 kW	>100 kW to 500 kW	>500 kW & upto 1 MW
1.	PV Module incl. degradation	27,092	24,834	23,333	22,485	23,330	21,386	20,093	19,363
2.	Land Cost, Civil and General Works	6,024	5,522	5,189	5,000	6,024	5,522	5,189	5,000
3.	Mounting Structures	2,428	2,226	2,092	2,015	2,378	2,180	2,048	1,974
4.	Power Conditioning Units	2,428	2,226	2,092	2,015	2,378	2,180	2,048	1,974
5.	Evacuation cost upto inter connection point (Cables and Transformers)	3,053	2,798	2,629	2,534	2,990	2,741	2,575	2,482
6.	Preliminary & Pre-operative expenses including IDC & contingency, etc.	2,256	2,068	1,943	1,873	2,041	1,871	1,757	1,694
	Total Capital Cost	**43,282**	**39,676**	**37,278**	**35,922**	**39,142**	**35,880**	**33,712**	**32,486**

CER Opinion

High Capital Cost for Improved Operational Parameters: The draft document identified upgradation of technology as one of the reasons for the revised capital cost. If so, the same should be reflected in efficient operational parameters to be considered for determination of tariff as well. The Commission should thus consider uprating the efficiency and other parameters (example: CUF, degradation factor, etc.) for different Solar PV applications.

Comparison of Capital Cost across PV: The technologically different PV modules have different prices. It is observed that the price of PV modules is reduced over the years compared to the price associated with other parameters that determine capital cost (refer Figure 2). The benchmark capital cost as given in the proposed document is ₹321.96 Lakhs/MW which includes 60.14% share of PV modules cost. It is suggested to specify the type of PV modules considered for determining the benchmark capital cost.

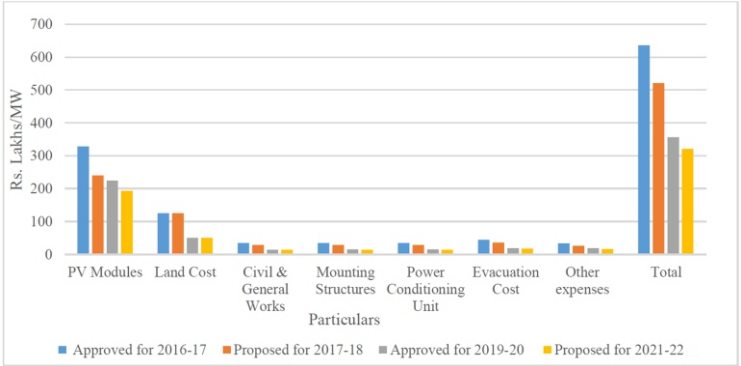


Figure 2: Comparison of Capital Cost Particulars for Solar

Levellised Tariff with Accelerated Depreciation Benefit: In the proposed document, for determination of generic tariffs for solar PV plants, solar thermal plants, and grid connected rooftop systems, the Commission has considered Accelerated Depreciation Benefit (ADB). Since the gross levellised tariff is higher (without considering the ADB) than that estimated after considering the ADB, it is also important to specify the modalities for verifying whether a project developer would be availing the benefit of ADB or otherwise. It is important to mention that the audited financial statement and the income tax returns (which make use of ADB) would be filed after the end of the ongoing financial year. Therefore, a clarity is needed on how a project developer would provide evidence/proof/undertaking at the time of raising the invoice for the energy injected regarding its intention to use the ADB.

Typo (Annexure A, No. 9): The proposed benchmark capital cost is ₹303.16 Lakhs/MW, whereas the same mentioned in Table 3 is ₹321.96 Lakhs/MW. It is required to verify and correct the data in the document.

Detailing for Determination of Capital Cost: Capital cost includes the cost of various components (e.g., PV modules, substructure, convertor, etc.), cost of civil works, transportation, taxes, Interest During Construction (IDC), local levies, etc. Considering the changes in the cost associated with various cost components, a segregated account of the same would enable better bench marking with industry standards and for comparison across states. It is suggested to provide necessary detailing and basis for determining various cost components.

Competitive Bid-based Project's Tariff: Levellised tariff for competitively bid projects shows a significant decline in the electricity procurement from Solar PV technology. A similar decline is generally not reflected in the benchmark capital cost. A comparative assessment of decline in bid-based tariff and that of the benchmark capital cost should enable vetting of the benchmarked capital cost and other cost components.

Tariff

APERC has evaluated the Yearly Transmission Charges (YTC) for the FY 2015-16, FY 2016-17 and FY 2020-21 as ₹14.35 Cr., ₹85.53 Cr., and ₹295.32 Cr. ,respectively, for APTRANSCO owned non-ISTS lines certified by the SRPC for inclusion in the PoC transmission charges. The YTC recovered will be adjusted against the ARR of the respective years of APTRANSCO.

APERC ordered that the APSPDCL has no right to collect wheeling or any other charges from Aditya Birla Renewables SPV 1 Ltd. (petitioner). The Commission has also declared that only APTRANSCO is entitled to collect wheeling and other charges permissible in law.

APERC directed DISCOMs (APSPDCL & APEPDCL) to provide the details of actual collected amounts at the end of recovery period for adjusting the variations (if any) in the ARR of the ensuing year for the retail supply business.

KSERC has approved the truing-up of accounts for 2019-20 of M/s. Thrissur Corporation Electricity Department (TCED), the details are given below:

- Total Revenue is ₹13,840.75 Lakh
- Total expenditure is ₹13,514.28 Lakh
- The revenue surplus for the year is ₹326.47 Lakh
- The cumulative revenue surplus till 2019-20 will be ₹15,216.44 Lakh (₹14,889.97 Lakh + ₹326.47 Lakh).

KSERC has decided to provisionally allow the claim of 5.28% depreciation, as well as an excess deduction of land as pointed out by the licensee, for a total of ₹1.26 Cr. made by KSEB Ltd., subject to the condition that the licensee furnishes asset category-wise details separately showing the "land and land rights" for each of the capitalised and put to intended use for the year 2016-17.

The Revenue Gap/Surplus has been revised as shown below:

Revenue Gap approved as per Order dated 12th October, 2020	₹1118.66 Cr.
Additional Depreciation approved	₹1.26 Cr.
Revised Revenue Gap for 2016-17	₹1119.92 Cr.

MERC determined project specific levelised tariff as ₹3.75/kWh for Veer SHP of M/s. Mahati Hydro Power Veer Project Private Ltd. (MHPVPPL) as per the Regulation 9 of RE tariff Regulation-2019. Since, the tariff is lower than that of average Power Purchase Cost, MERC directed MSEDCL to sign the PPA with MHPVPPL.

MERC condoned the delay for PPA execution and approved to continue power from Manikaran Power Ltd. to Brihanmumbai Electric Supply and Transport (BEST) undertaking. MERC also, revised the start date as 1st March, 2020.

MERC adopted Short Term (ST) power purchase from 1st October, 2021 to 30th June, 2022 by Nidar Utilities Panvel LLP. It also allowed Nidar Utilities Panvel to assume additional ST power purchase if demand of power exceeds the contracted capacity.

RERC directed RVPN to refund/adjust Income Tax on RoE by Shree Cement Ltd. within one month, as it views that this amount must be shared between Distribution and Transmission Licensees.

TNERC directed TANGEDCO to evolve a proposal with details of services in the State, no. of services for water treatment plant, sewage treatment plant and fire hydration system, energy consumption per annum and details in accordance with Section 62(3) of the Electricity Act, 2003 and submit the same while filing of petition for determination of tariff for tariff reclassification.

TNERC directed TANGEDCO to adopt single part tariff for B&G Solar Pvt. Ltd. at ₹10.68 per unit.

TSERC directed that the pooled cost of power purchase for FY 2020-21 which is to be considered for FY 2021-22 will be ₹4.320 / kWh. TSERC approved ARR (in Rupees Crore) True-Up of (TSTransco) for FY 2019-20 as provided below:

Particulars	FY20
O&M Expenses	833.39 Cr.
Depreciation	972.94 Cr.
Interest on Loan	747 Cr.
Interest on Working Capital	63.83 Cr.
Return on Equity	-
ARR	2617.16 Cr.
Non-Tariff Income	514.82 Cr.
Net ARR	2102.35 Cr.

WBERC approved the claim of WBSEDCL regarding loss of ₹45 Cr. incurred on demolition of fixed assets due to AMPHAN will be dealt in the ARR petition for the year 2020-21. The Commission also directed that WBSEDCL must submit detailed documents with ARR petition to justify their claim.

Power Procurement

AERC approved the purchase of 10 MW power each from M/s. Purshotam Profiles Private Ltd. at Region 1 (Lower Assam Zone) and Region 3 (Cachar, Karimganj, Hailakandi) with a tariff of ₹3.35 kWh determined following a competitive bidding process.

BERC approved the petitioner's request to exit the MTPS Stage-I (2x110 MW) Power Purchase Agreement (PPA) at the end of the period specified in their PPA (*i.e.*, on 7th September, 2021), subject to compliance with all relevant terms and conditions specified in the Ministry of Power, Govt. of India order dated 22nd March, 2021.

The proposal to purchase 300 MW (Tranche V) and 350 MW (Tranche VI) wind power and 300 MW (Tranche III) solar power from SECI on a long-term basis for a period of 25 years at the Individual discovered rate of tariff duly approved by the CERC, as well as the terms and conditions set forth in the said CERC orders.

BERC enabled offtake of solar electricity from the project's commissioning of part capacity and has also required SECI/petitioner to notify it of the date of CoD for wind and solar power plants as and when it occurs.

DERC reviewed additional UI Charges of ₹4.42 Cr. and Sustained Deviation charges of ₹12.37 Cr. based on inputs from Delhi SLDC that were jointly signed by SLDC and BRPL. As a result, the aforementioned charges were prohibited from the Power Purchase Cost.

DERC allowed the review petition filed by BSES Rajdhani Power Ltd. for the rectification of formula of carrying cost calculation as given below:

Rectified formula: Carrying cost = [((Opening Balance + Closing Balance)/2) x Rate of Carrying Cost in (%)]

HERC reviewed the petition of Association of Power Producers (APP) for seeking amendments in the MYT Regulations, 2019, to provide for pass-through of income tax/MAT in the ARR / Tariff of the power generating companies whose tariff is determined by the Commission under Section 62.

The Commission took note of the submissions and arguments of the petitioner as follows:

- Forum of Regulators (FOR), is seized with the issue of RoE, grossed up by applicable tax rate, in the light of its cascading impact on the tariff payable by the electricity consumers.
- The effective or even the base RoE ought not to be viewed in isolation but has to be aligned with the macro parameters including risk free interest rates, term lending interest rates as well as the cost of capital.
- There is a strong case of linking base RoE (pre-tax) with performance and risk profile of different businesses i.e. generation (could be different for hydro and others), transmission, distribution and trading.

PSERC directed PSPCL to forego allocated power share from NTPC's Anta, Auraiya and Dadri power stations.

PSERC allowed PSPCL to renew the PPAs of NHPC's Bairasuil, Sewa–II, Chamera–III, Uri-II and Parbati-III Hydro Power Stations in view of the fact that the levelised tariff of these plants seem reasonable and the generation profile allows peak demand power to be available.

RERC directed JVVNL, AVVNL, JdVVNL and RUVNL to verify claims made by the wind/solar GENCOs according to the PPAs, and orders earliest clearance of all dues (Principle and LPS) on first come first serve basis irrespective of them having filed a petition.

RERC observed that Dhursar Solar Power Pvt. Ltd. is not entitled to claim relief which was available during filing the earlier petition. Thus, the prayers cannot be granted. Dhursar Solar Power Pvt. Ltd. is liable to pay reactive energy charges only on drawn energy, not on injected energy. JdVVNL is thus directed to refund all reactive energy charges, on injected energy, if any.

TNERC directed TANGEDCO to negotiate and reduce ₹0.07/ kWh trading margin with SECI and report the result before signing PSA. However, due to approval of pre-issued quantum and price being competitive, the PSA may be signed followed by submitting a copy to TNERC.

TNERC directed TANGEDCO to verify the claim by Ramnad Renewable Energy Ltd. regarding invoices which have been pre-admitted for payment and pay interest at 1% per month within 30 days from the date of order for the delay in settlement of the invoices beyond the period prescribed in PPA.

TNERC ordered R.K.K.R. Steels Ltd. may claim payment for unutilized power generated during the period from April 2014 to July 2015 at 75% of the normal purchase rate considering the energy is permitted to be injected in its grid by TANGEDCO.

TNERC adopted rate from ₹3.15/unit to ₹3.40/unit for procurement up to 1000 MW RTC power from 15th February 2021 to 20th May 2021, and approved procurement of 2156.4 MU in the same time period

TNERC directed TANGEDCO to not levy the Transmission, Wheeling & Scheduling & System Operating Charges (MTOA) during the pandemic period.

(a) The demand of ₹1,34,51,325/- as the dues are foregone due to the force majeure condition when there was no utilisation of infrastructure.

(b) The demand of ₹1,38,99,703/- as the dues are foregone to the extent there was no utilisation of the transmission and distribution infrastructure due to force majeure conditions.

Renewable Energy, RPO and REC

APERC directed that the co-generation captive plants are entitled to be exempted from compliance of RPPO and hence exempted Steel Exchange India Ltd. from compliance of RPO.

HPERC directed to offset the cumulative shortfall of Non-Solar RPOs of 83.52 Mus (up to FY 2018-19) by a surplus of Non-Solar RS of 1389.63 MUs in FY 2019-20. For Solar RPO compliance of FY 2019-20, the Commission determined the balance shortfall of Solar RPOs of 120.53 MUs by surplus Solar RE of 16.53 MUs in FY 2019-20.

HPERC directed that the generic levelised tariff for Solar PV power projects for FY 2021 -22 will be as follows:

Sl.No.	Capacity	Generic levelised tariff (₹/kWh)
1.	**Projects to be set up in other than industrial areas and urban areas**	
(a)	Up to 1 MW	3.38
(b)	Above 1 MW to 5 MW	3.34
2.	**Projects to be set up in industrial areas and urban areas**	
(a)	Up to 1 MW	3.45
(b)	Above 1 MW to 5 MW	3.41

JERC has approved the purchase of 50 MW solar power and 100 MW wind power from ISTS connected solar and wind power project respectively.The details are given below:

Quantum	50 MW Solar Power	100 MW Wind Power
Firm	M/s. SECI (SECI has signed the Power sale agreement with M/s. ACME Solar Holdings (P) Ltd., New Delhi for procurement from 300 MW solar power plant)	M/s. SECI (SECI has signed the Power sale agreement with M/s. Sitac Kabini Renewables (P) Ltd. for procurement from 300 MW wind power plant)
Tariff	₹2.51/kWh(Tariff of ₹2.44/kWh + trading margin of ₹0.07/kWh)	₹2.84/kWh(Tariff of ₹2.77/kWh + trading margin of ₹0.07/kWh)
Modified COD	3rd March, 2022	28th February, 2022
Tenure	25 Years	25 Years

MERC determined project specific levelised Tariff for PBESPL's Municipal Solid Waste project without considering CFA at ₹7.45/kWh and considering maximum CFA of ₹50 Cr. at ₹6.53/kWh.

MERC allowed captive power plants to fulfill their cumulative RPO targets by 31st March, 2022.

MERC allowed Adani Electricity Mumbai Ltd. to begin bidding for power up to 500 MW on an RTC basis from grid-connected Renewable Energy Power Projects, supplemented with Other Non-Renewable Energy Sources. The Renewable Energy purchased will also be counted towards its RPO targets.

RERC directed RUVNL to pay variable charges (VC) for FY 2020-21 to old plants at rate in Tariff Order dated 15th January, 2020 for FY 2019-20 and not to recover VC paid for FY 2020-21. If recovery has been made, it must be refunded within 1 month from the date of order. Same VC will be applicable FY 2021-22 until revised order based on new fuel price recommended by State Level Committee is issued.

M/s. Hindustan Aeronautics Ltd. filed the petition for seeking directions to provide net metering facility for the solar rooftop power plant installed at petitioner's factory with M/s. Madhyanchal Vidyut Vitran Nigam Ltd. (through its managing director and executive engineer) and M/s. Uttar Pradesh New and Renewable Energy Development Agency (UPNEDA). The Commission approved the net metering facility for 2.4 MW grid connected roof top solar power facilities at petitioner's premises.

Note: *'Other Notifications' can be accessed through the online version of this issue.*

Others

APERC directed APSPDCL to pay all the outstanding bills to IOCL under all the four PPAs as per the invoices raised by the petitioner in two equal monthly instalments. The Commission further ordered APSPDCL to pay Late Payment Surcharge (LPS) on the arrears at 50% of the ruling Prime Lending Rate along with the arrears.

APERC ordered APSPDCL & APTRANSCO to pay interim tariff at ₹2.43 per unit from 11th year onwards.

APERC has imposed a token penalty of ₹1,000 on APSPDCL. One month time is given to APSPDCL and is permitted one month's time to pay the balance sum of ₹18,45,893-13ps to M/s. Siflon Drugs (applicant). If such payment is not made, APSPDCL will continue to pay penalty of ₹6,000 per every day during which the failure continues from the expiry of one month from the date of order.

HERC clarified the Power Purchase Agreements (PPA) and petition over the cost of generating loss in its 10 MW Solar Plant Project in Panipat due to UHBVNL's 33 kV evacuation line's non-availability / frequent tripping. The PPA, according to the Commission, are crystal clear and do not require any intervention.

HERC directed to release of electricity connection in the NDS category for a load of 950 kW on single point basis in pursuance of M/s. EIH Ltd., Gurugram application, after deposit of requisite charges/creation of infrastructure at their cost in relaxation of the HERC Single Point Supply Regulations, 2020.

HERC granted the approval for the electrification plan 1st phase of the project Specific Special Economic Zone for Electronic Hardware, IT/ITES Sector, at Vill. Behrampur and Balola in District Gurugram developed by M/s. Mikado Realtors Private Ltd.. which is comprising of ultimate load of 25992 kW with contract demand of 28880 kVA, the sanction of partial load of 4000 kW with contract demand of 4445 kVA.

HERC approved the UHBVN and DHBVN petition on seeking amendment of the HERC (Standards of Performance of Distribution licensees and Determination of Compensation) Regulations, 2020 and modification of the Regulations in view of the practical difficulties experienced in the implementation.

HERC resolved the dispute raised by Haryana Power Generation Corporation Ltd. (on behalf of UHBVNL & DHBVNL) regarding the higher tariff claimed by Power Trading Corporation Ltd. and GMR Kamalanga Energy Ltd. which is supplying power to Haryana from its 1400MW plant in Odisha as per PPA.

The Commission corrected in the Regulations and directed as follows:

Sl. No.	No. Nature of Service	Area	Standard (Including Time Limit for rendering Service) revised schedule
3	Normal fuse off	Rural	Within 16 hours
4	Line Break Down	Rural	Area Within 16 hours (48 hrs. if pole gets broken)
19	Issue of No Dues Certificates	-	Within 7 days from the date of application and clearance of outstanding dues, if any
10	Meter Complaints (Inspect and Check Correctness)	-	Within 3 days of receipt of request/complaint along with requisite fee
	Meter Complaints (Replace slow/fast meters/creeping or stuck meters)	Urban	Within 3 days
		Rural	Within 7 days

PSERC permitted PSPCL to take up works for construction of stone/boulder masonry, parapet wall on cement concrete lining, from RD 33310M to 35500M on both banks of Mukerian Hydel Channel Stage-1. PSPCL is directed to submit a consolidated petition for approval of new schemes.

PSERC directed PSPCL to re-calculate the charges for release of extension in load/demand, within 3 weeks and communicate the same to the petitioner G. O. Steel Pvt. Ltd. Penalty of ₹10,000/- is imposed on the PSPCL under Section 142 of the Electricity Act, 2003 after conducting the fact that PSPCL has contravened the provisions of Regulations 9.1.3(iii) and 9.3.1 of the Supply Code, 2014.

Shri Prithvi Alloys Pvt. Ltd. and JVVNL were directed to appear before SLDC for redressal of grievances. SLDC is directed to consider grievances on issue of "time drift" within 30 days after providing opportunity of hearing and pass a reasoned order.

RERC observed that JVVNL has dropped NIT for purchase of single phase and three phase meter with net metering capability on 19th February, 2021, thus no cause of action arises on the petition. RERC directed JVVNL to ensure list of approved venders from whom consumer may purchase such meters, is made available on the website within 3 months date of order.

TNERC directed TANGEDCO to make payment towards the unutilised banked energy up to 31st March, 2011 within 30 days from the order with interest @ 1% per month till the date of payment.

TNERC directed TANGEDCO to revise energy accounting for 2009-10 *w.r.t* ITC Ltd. case; and refund energy amount with interest 12% per annum *w.e.f.* 2009-2010 within 30 days date of order.

ERC Tracker

Regulatory Updates

WBERC approved WBSEDCL's application for approval of investment for electrification pump sets under 'Rapid Electrification of Agriculture Pump Sets (REAPS Phase III)' scheme with an estimated project cost of ₹210 Cr. The Commission directed that this project will be funded by the State Government through grant.

WBERC approved the application of WBSETCL for revision of capital expenditure for establishment of 220/132/33kV GIS at Newtown IIC with associated transmission system and establishment of D/C UG cable connectivity with Rajarhat 400kV PGCIL substation. The Commission approved the revised project cost of ₹309.72 Cr. as tabulated below:

Sl. No.	Particular	Revised Project Cost (in Rupees Cr.)
1.	Cost of Land	19.78
2.	Substation Part	71.88
3.	Trans. Line from 400 kV PGCIL Rajarhat substation to 220 kV Newtown IIC (UG Cable RL ~ 11.5kM)	151.77
4.	Total Cost (1+2+3)	243.43
5.	Supervision charge	33.55
6.	Project Cost (4+5)	276.99
7.	IDC	32.73
8.	Overall Project Cost (6+7)	309.72

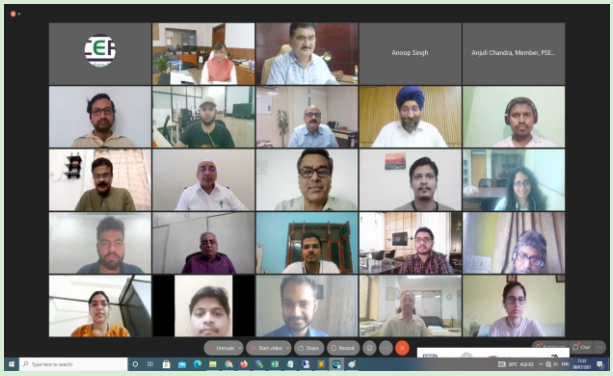
Tariff Orders

State/Union Territory (SERC)	Licensee/Utility	True-up	Annual Performance Review (APR)	Aggregate Revenue Requirement (ARR)	Tariff
Chhattisgarh (CSERC)	CSPDCL, CSPTCL, CSPGCL	FY 18-19, FY 19-20	-	FY 21-22	FY 21-22
	CSLDC	FY 19-20	-	FY 21-22	FY 21-22
Gujarat (GERC)	DPT	FY 18-19, FY 19-20	-	FY 21-22	FY 21-22
Himachal Pradesh (HPERC)	HPSLDC	FY 18-19 to FY 20-21	-	-	-
Rajasthan (RERC)	JVVNL, AVVNL, JdVVNL	FY 19-20	-	-	-
Uttar Pradesh (UPERC)	DVVNL, MVVNL, PVVNL, PuVVNL, KESCO	FY 19-20	FY 20-21	FY 21-22	FY 21-22
	NPCL	FY 19-20	-	FY 21-22	FY 21-22

Regulations

Title	Date of Approval/Notification
Renewable Energy (including RPO and REC)	
PSERC (Grid Interactive Rooftop Solar Photovoltaic Systems), Regulations, 2021	18th August, 2021
CSERC (Grid Interactive Distributed RE Sources) (First Amendment) Regulations, 2021	27th July, 2021
Modified CSERC (RPO and REC Framework Implementation) Regulations, 2021	08th July, 2021
Supply Code	
JERC (Electricity Supply Code) (Second Amendment) Regulations, 2021	1st July, 2021
Others	
KSERC (Conduct of Business) (Amendment) Regulations, 2021	12th August, 2021
TSERC (Smart Grid) Regulations, 2021	02nd July, 2021
WBERC (Conduct of Business) (First Amendment) Regulation, 2021	09th September, 2021
WBERC (Recovery of Expenditure for providing New Connections) (Second Amendment) Regulations, 2021	06th August, 2021
MYT	
APERC (Terms & Conditions for Determination of Tariff for Wheeling and Retail Supply of Electricity) Regulation, 2005	02nd July, 2021
CSERC (Terms and Conditions for Determination of Tariff according to Principles and Methodology and Procedure for Determination of Expected Revenue from Tariff and Charges) Regulations, 2021	13th August, 2021
KSERC (Terms and Conditions for Determination of Tariff) Regulations, 2021	06th August, 2021

2nd Regulatory Conclave on "Impact of Covid-19 on Electricity Supply Chain: Regulatory and Policy Perspectives"



Centre for Energy Regulation (CER), IIT Kanpur organized the 2nd Regulatory Conclave on 8th July, 2021 to discuss "Impact of Covid-19 on Electricity Supply Chain: Regulatory and Policy Perspectives". Mr. Rakesh Nath, Ex-Chairperson, CEA, Ex-Technical Member, APTEL, inaugurated the Conclave and gave his opening remarks. The key discussion points were: Identifying Impact of COVID-19 on the Indian Electricity Sector, Impact on Electricity Demand: Insights from State-level Demand Profile, Impact on Power System and System Operator's Response, Impact on Merit Order and Generators: Role of Growing RE, Carbon Emissions from Thermal Power Plants: Pre- & Post- COVID Analysis, Ancillary Services and Transmission Network, Impact on Power Market, Impact on Financial Health of DISCOMs: Analysis Across Selected States and Regulatory and Policy Insights for Addressing Impact from Disruptive Events. More than 40 participants from different ERCs joined in the conclave.

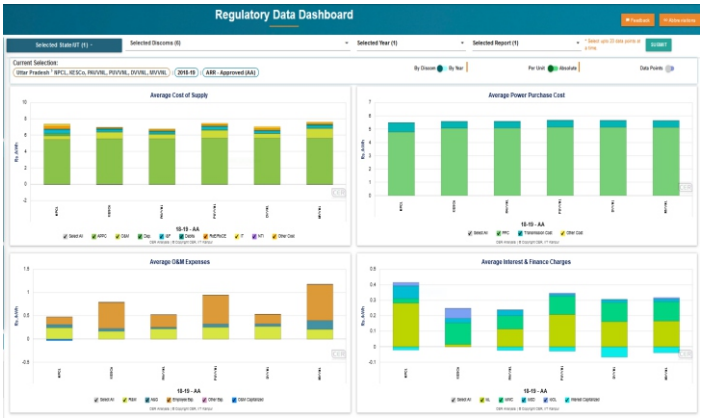
Launch of "Reform and Regulatory Knowledge Base for Power Sector"

Hon'ble Minister of Power, New & Renewable Energy, Government of India Shri R. K. Singh launched the "Regulatory Data Dashboard" and the "Regulatory Certification Program" on 6th August, 2021 at Delhi. Shri Krishan Pal, Hon'ble Minister of State for Power, Shri Alok Kumar, Secretary (Power), Ministry of Power, Shri Ghanshyam Prasad, Joint Secretary (OM, R&R), Ministry of Power, Prof. Abhay Karandikar, Director, IIT Kanpur and Prof. Anoop Singh, Coordinator, CER, IIT Kanpur were also present at the ceremony.

Regulatory Data Dashboard provides a visualized snapshot of techno-commercial aspects associated with the regulated business across generation, transmission, and distribution segment across India. The dashboard includes data associated with ARR and True-up petition, and respective regulatory order thereof.

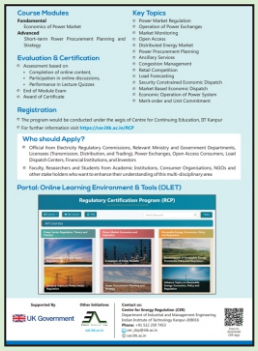
Regulatory Certification Program will provide an opportunity to learn fundamentals and technical concepts of economics, finance, engineering, operations, and law to supplement regulatory research and analyze the key issues in the Indian power sector. It is designed to enable rapid capacity development on regulatory aspects and power sector policy.

First Regulatory Certification Program (RCP) on "Power Sector Regulation: Theory and Practice" was scheduled between 02-31st October, 2021. The program was conducted under the aegis of Centre for Continuing Education (CCE), IIT Kanpur. More than 100 working professionals from different organizations have shown interest in this program. The online sessions (about 28 hours) was taken by leading National and International experts.



Regulatory Certification Program on "Power Market Economics and Operation"

CER, IIT Kanpur is pleased to announce Regulatory Certification Program on "Power Market Economics and Operation" from November 20 - December 20, 2021.

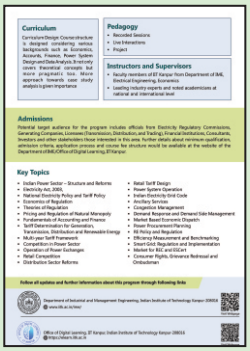


The program is suitably designed for Commissioners and Officers from Electricity Regulatory Commissions (ERCs), Relevant Ministry and Government Departments, Stakeholders from Generating Companies, Energy Companies, Licensees (Transmission, Distribution, and Trading), Power Exchanges, Open Access Consumers, Load Dispatch Centers, Financial Institutions and Investors, Consultants, Faculty, Researchers and Students from Academic Institutions, Consumer Organisations, NGOs and other stake holders who want to enhance their understanding of this multi-disciplinary area.

For further program details including key topics, registration fee, resource persons, please visit **https://cer.iitk.ac.in/olet/rcp**

eMasters Programme

IIT Kanpur has introduced eMasters programme on "Power Sector Regulation, Economics and Management" under the aegis of Department of Industrial and Management Engineering (IME). This multi-disciplinary program, approved by Senate, IIT Kanpur, aims to provide conceptual and applied understanding of power sector regulation from economic and regulatory perspectives.



Highlights of the Programme :

- Direct Selection (GATE Score not required)
- Executive Friendly Schedule
- Career Advancement and Networking
- Leading National and International Experts
- Live Interactive Sessions
- Credits Transfer for M.Tech./ Ph.D. at IIT Kanpur

For more details about minimum qualification, admission criteria, application process and course fee structure, please visit our page: **https://emasters.iitk.ac.in/**

We invite readers to register at CER's web portal to access CER's publications and resource material. This would also help us design CER's activities and deliver a more relevant output by engaging with stakeholders. We also request your inputs on the newsletter and the activities of the Centre.

Regulatory Insights Team

Other Initiatives

Energy Analytics Lab

eal.iitk.ac.in

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Note: *Additional information can be accessed through the hyperlinks provided in the online version of this newsletter.*