



REGULATORY INSIGHTS



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Editorial

The guidelines for implementation of solar PV based agriculture pumps, under the PM-KUSUM scheme, aims to promote deployment of RE resources across the rural grid, and implementation of grid-connected as well as off-grid irrigation pumps. The provisions related to land acquisition should not encourage large-scale conversion of the arable land thus influencing the long-term food security of the country. Due to limited surplus capacity at substations, the provisions should ensure that there is no permit squatting thus preventing other potential investors to seek necessary permissions to install solar power plants. To bring greater transparency, the process and status of granting such permission including submission of EMD and PBG should be available online. Certain provisions, especially that providing for a minimum CUF(15%), lack enforceability in the absence of any penal provision for inability to meet such targets. CER's detailed opinions on the guidelines are outlined in this newsletter.

UPERC Captive and Renewable Energy Generating Plants (CRE) Regulations, 2019 have addressed a number of shortcomings, particularly those related to banking and withdrawal of energy. Given the reduction in financial risk undertaken by the DISCOMs due the earlier existing disparity between the time-slots of banked and drawn energy, the applicable banking charges are very high in the economic sense, should be lowered.

CERC's direction to implement Automatic Generation Control (AGC), at all thermal ISGS stations with installed capacity of 200 MW and above, and all hydro stations (more than 25 MW) excluding the Run-of-River Hydro Projects irrespective of size, is a welcome step. This should help address the grid imbalances with the growing share of variable renewable energy. Such provisions should gradually be implemented across the state-level generators to assist the system to absorb greater share of renewable energy in the future.

The multi-year tariff framework across most of the states has largely been retained as per the previous tariff cycle. Substantial changes in the consumer tariff design have not been witnessed, with few exceptions like increase in fixed charge in the tariff structure.

While the tariff design should gradually reflect cost incidence, it should encourage efficiency in use. It should also provide incentive for investment in the grid and enabling environment for competition to carriage and content separation.

Anoop Singh

Coordinator, Centre for Energy Regulation

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UK Government

Pradhan Mantri Kisan Urja Suraksha evam Utthan Mahabhiyan (PM KUSUM)

MNRE launched PM KUSUM with a central aid of ₹34,422 crore up to 2022 to encourage farmers to generate solar or other renewable power at their farms and use the clean energy to replace their diesel pumps. The scheme should contribute 25,750 MW of solar capacity towards the overall target of 100 GW.

| Component | Description | Capacity | Mode of Implementation | Funding |
|-----------|--|-----------|------------------------|---------|
| A | Decentralized Ground/Stilt Mounted Grid Connected Solar or other Renewable Energy based Power Plants | 10,000 MW | Pilot - 1000 MW | MNRE |
| B | Installation of Stand-alone Solar Agriculture Pumps | 17.5 lakh | Full fledged | |
| C | Solarisation of Grid Connected Agriculture Pumps | 10 lakh | Pilot - 1 lakh pumps | |

Guidelines: Selection & Implementation

Component A: Setting up of 10,000 MW of Decentralized Ground/Stilt Mounted Grid Connected Solar or other Renewable Energy based Power Plants

Eligibility & Capacity

- Individual farmers/group of farmers/cooperatives/panchayats/Farmer Producer Organisations (FPO)/Water User associations (WUA), termed as Renewable Power Generator (RPG), can set up solar or other renewable energy based power plants (REPP) of capacity ranging from 500 kW to 2 MW. In specific cases, states/DISCOMs may also allow installation of plants with less than 500 kW capacity.
- REPP installation within 5 km radius of substations are preferred.

Norms for Installation & Power Purchase

- DISCOMs will declare substation wise surplus capacity which can be fed into the grid by REPP. Renewable power generated by beneficiaries (REPP) will be purchased by DISCOMs at a pre-fixed levelised tariff under a 25-year PPA.
- If offered aggregate capacity, exceeds that notified by DISCOM for a particular substation, a bidding route with a ceiling at prefix levelised tariff would be adopted.
- Equity infusion by DISCOM/developer is permitted if the applicant is unable to arrange enough equity. Such applicant can get lease rent in terms of ₹/year/acre of land or ₹/unit energy generated/acre of land area on their land as per on mutually agreed land lease agreement.
- The project would be primarily installed on barren/uncultivable land. In the case of agricultural land, stilt fashion could be adopted with sufficient space between panel rows to ensure unaffected farming.
- Plant has to be commissioned within nine months from date of issue of Letter of Award (LoA).
- RPG is required to achieve a minimum annual average CUF of 15% during the PPA period. Minimum CUF can be revised by the concerned DISCOM for low solar radiation zones.

Bank Guarantee

RPGs have to provide Earnest Money Deposit (EMD) of ₹1 Lakh/MW along with EoI and Performance Bank Guarantee (PBG) of ₹5 lakh/MW within 30 days from date of issue of LoA.

MNRE & Implementation Agencies

- MNRE will provide Procurement Based Incentive (PBI) at the rate of 40 paise/kWh or ₹6.60 lakh/MW/year (whichever is lower) to DISCOMs for five years from the COD.
- MNRE will also allocate initial pilot project capacity of 1000 MW to DISCOMs and will issue Model PPA and Model Lease Agreement for implementation of the scheme.
- State Nodal Agencies (SNAs) will coordinate with DISCOMs, States/UTs/farmers for the implementation of scheme.
- The DISCOMs would facilitate successful implementation of the scheme by ensuring 'Must-run' status to the REPP and keeping the feeders 'ON' during the day time.

| Criteria | Component B: Installation of 17.5 Lakh Stand-alone Solar Pumps | Component C: Solarisation of 10 Lakh Grid Connected Agriculture Pumps |
|------------------------------------|--|--|
| Eligibility | To replace existing diesel agriculture pumps/irrigation systems by farmers, water user associations and community/clusters and installation of new pumps | To solarise grid connected agriculture pumps of individual farmers, water user associations and community/clusters |
| Dark Zones* | <ul style="list-style-type: none"> Installation of new pumps are not allowed Only existing standalone diesel pumps using micro irrigation systems | Only existing grid connected pumps |
| Allowable Capacity | Up to 7.5 HP of pump capacity. | up to two times of pump capacity in kW, capacity should not be less than pump capacity in HP |
| Priority | Small and marginal farmers specifically those using/covered under scheme of /opt micro irrigation systems | |
| Central Financial Assistance (CFA) | <ul style="list-style-type: none"> CFA and state government subsidy, 30% each of the benchmark/tender cost (whichever is lower) of the solar PV component CFA of 50% in case of North Eastern States, Sikkim, Jammu & Kashmir, Himachal Pradesh and Uttarakhand, Lakshadweep and A&N Islands | |
| CFA Limit | Up to 7.5 HP pumps | up to two times of pump capacity in kW for pumps up to 7.5 HP |
| Tendering | CPSU | CPSUs or State Implementation Agencies |
| Must-run Status | DISCOMs should ensure 'must-run' status of the plants and the feeders should also be in 'ON' state during the daytime | |
| Selection & Implementation | State Implementation Agencies (DISCOMs/GENCO/any other Department designated by State Government) subject to final sanction by MNRE | |
| Timeline for Completion | 12 months from the date of sanction by MNRE (15 months for North Eastern States, Sikkim, Jammu & Kashmir, Himachal Pradesh and Uttarakhand, Lakshadweep and A&N Islands) | |
| Monitoring | Mandatory to install remote monitoring system | |
| Others | Option of Universal Solar Pump Controller (USPC), cost to be borne by the farmer, to use the solar PV capacity optimally | DISCOM may adopt Net Metering or Pump operation based only on generated solar power for the solarisation of pumps |

* Replenishable ground water resources categorized as “over exploited” by Central Ground Water Board (CGWB) and State Governments (Source: MOWR)

CER Opinion

- ❖ Use of agricultural land for setting up of solar modules (on stilts) in arable land would either lead to encourage unabated conversion of arable land affecting local employment for agricultural labour and long term food production.
- ❖ Farming activity cannot be effectively continued on the piece of land, used to deploy solar panels (even on stilts). Shadow from fruit plantation would also reduce CUF over the lifetime of the solar plants. These land selections should ensure minimal loss of arable land. GPS boundary marking of the site could be mandated to avoid such land conversion.
- ❖ DISCOM to publish substation-wise data on location (including GPS), unique asset number, total capacity, available surplus capacity, capacity allocated for REPP, including details of plant location, plant size, date of application, date of LoA, status of EMD & PBG post 30-day limit after LoA and actual date of deposit EMD & PBG, date of installation, date of synchronisation, meter ID etc.
- ❖ In case the feeding substation is not repaired within the time limit set under SoP, approved by respective SERC, the

RPG should be paid for deemed generation of power based on suitable norms for that area.

- ❖ The enforceability of minimum CUF 15% is questionable as the guidelines do not specify the repercussion of failure to do so. Also, radiation level for identifying low solar radiation zones should be predetermined as the respective SERC may decide levelised tariff otherwise investment for setting up plants in such zones would be inefficient as well as uneconomical.
- ❖ It should be specified whether EMD/PBG will be applicable on pro-rata basis in case of part MW capacity.
- ❖ The procedural complexity particularly in the context of PPA, EMD, PBG and PBI needs to be minimized for the farmers/cooperatives/panchayats/FPO/WUA, who would face significant transaction cost in dealing with multiple offices located in urban/semi-urban centres.
- ❖ The mechanism for enabling replacement of owned/rented diesel pump sets needs to be clearly enunciated.
- ❖ Given the poor financial state of most of the DISCOMs across the country, payment of PBI should be implemented under a direct benefit transfer scheme on monthly basis.
- ❖ A large number of states provide rotational power supply to farmers primarily during night hours ensuring adequacy of supply as well as cheaper cost of power purchase. Ensuring the must run status to REPP by keeping feeders ON during day time, in the near term, would impose additional day time system load for which the DISCOM may have to undertake relatively costly power procurement. Presence of single REPP would force the DISCOM to keep the feeders ON during day time, which may not be feasible as feeder separation has been implemented by most states allowing curtailment of power during the day.
- ❖ Most small and marginal farmers may not use micro irrigation system.
- ❖ Process of sanction and implementation of the scheme should be streamlined by the respective State Nodal Agencies for RE through a web-/mobile- based system.



UPERC Captive and Renewable Energy Generating Plants (CRE) Regulations, 2019

UPERC launched CRE, Regulations 2019 for all captive generating plants (both RE and non-RE) and renewable sources of generation and co-generation existing prior or after 1st April, 2019. This became effective on 1st April, 2019 and shall remain in force till 31st March, 2024 unless reviewed earlier or extended by the Commission.

| Parameters | Captive Generating Plant (Non-RE) | RE Based Generating Plant (Including RE Co-generation and Captive RE) |
|---------------------------------|--|--|
| Eligibility | All existing captive plants/RE generation and co-generation plants | |
| | All captive power plants (1 MW or above) as defined in the regulations | <ul style="list-style-type: none"> • SHP – capacity below or equal to 25 MW • Biomass projects – based on Rankine cycle technology • Other projects as approved by MNRE |
| Control Period | Duration of 5 years effective from 1 st April, 2019 to 31 st March, 2024 | |
| Open Access (OA) | Right to 'open access' for carrying electricity from the plant to the destination of its use by using transmission and / or distribution system under applicable rules, regulations and orders | |
| Availability Based Tariff (ABT) | As applicable to conventional generating plants | <ul style="list-style-type: none"> • All RE sources except SHP and MSW based plants • Full capacity charge recovery to be based on lower of actual or scheduled availability subject to minimum 50% PLF for biomass and bagasse based plants to be prorated below the targeted PLF |

| Parameters | Captive Generating Plant (Non-RE) | RE Based Generating Plant (Including RE Co-generation and Captive RE) |
|---|---|--|
| Transmission and wheeling charges | Plant seeking Open Access to pay relevant transmission and wheeling charges | <ul style="list-style-type: none"> As applicable to non-RE captive power plants Exemption of 50% (100%) on wheeling/transmission charges on Intra-state (Inter-state) sale of power by large scale stand-alone solar projects set up for sale of power to DISCOMs/third party or for captive use |
| Transmission and wheeling charges | <ul style="list-style-type: none"> Not applicable for self-consumption and for sale to distribution licensee. Consumers, other than its users, to pay CSS & other charges. | State CSS exempted for inter-state sale of power by large scale stand-alone solar projects set up for sale of power to DISCOMs/captive use/ third party or in captive use |
| Metering | ABT compatible Special Energy Meters at the point of injection & drawl (except for SHP & MSW plant) | |
| Evacuation level (by contracted capacity) | <ul style="list-style-type: none"> 11 kV - Up to 3 MW. 33 kV - above 3 MW and up to 20 MW 132 kV - above 20 MW | |
| Banking and drawal of Power | <ul style="list-style-type: none"> Banking of energy up to 100% (except for SHP and MSW plants) subject to technical feasibility regarding evacuation Drawal allowed only as per ToD system i.e. drawal of power during peak/off-peak hours cannot be more than the power banked in the respective time slot Subject to day-ahead scheduling | |
| | <ul style="list-style-type: none"> Banking charges - 12% Unutilized banked energy can be carried forward to the next FY. After this, unutilized power can be sold to DISCOM at the rate approved for captive plant (Non-RE) If max. demand exceeds contracted demand during the drawal period, 150% of the applicable demand charge would be applicable on the exceeded demand | <ul style="list-style-type: none"> Banking charges - 6% for Solar and Wind; 12% for other technologies Power banked in Qth quarter should be withdrawn within (Q+2)th quarter, upon expiry of this period, unutilized power can be sold at lower of ₹2/unit or the rate approved in PPA by deducting the banking charges |
| Tariff | Weighted average of the tariff for contracted capacities of units commissioned in different years | |
| Tariff during synchronizing & commissioning | Equal to variable cost | <ul style="list-style-type: none"> Equal to variable cost for bagasse and biomass based power plants 50% of tariff for other RE plants |

CER Opinion

- ❖ DISCOMs' concern for the value of banked and drawn power has been addressed adequately by implementing ToD based drawl against banking of energy. Given the reduction in risk exposure of DISCOMs, banking charges may be reduced. Dispatchable RE (excluding solar and wind) should be subjected to same, if not lower the banking charges.
- ❖ Seasonality of banked energy should also be considered for drawl if power banked during surplus months is to be drawn during high demand months.
- ❖ The upper limit of ₹2/kWh rate for purpose of unutilised banked power by DISCOM, though appropriate for solar and wind, is low in case of SHP and MSW plants and may be appropriately revised.

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Tariff



CERC approved capital cost (in ₹ crore) in order to determine tariff of **NathpaJhakri Hydro Electric Power Station (6×250 MW)** for the period 1st April, 2014 to 31st March, 2019 as:

| Cost | FY 15 | FY 16 | FY 17 | FY 18 | FY 19 |
|----------------------|---------|---------|---------|---------|---------|
| Capital Cost (op.) | 8773.08 | 8786.23 | 8795.81 | 8809.20 | 8835.17 |
| Addl. Capitalisation | 13.15 | 9.58 | 13.39 | 25.97 | 54.96 |
| Capital Cost (cl.) | 8786.23 | 8795.81 | 8809.20 | 8835.17 | 8890.13 |

CERC gave approval to include total expected Liquidity Damages (LD) amount of ₹160 crore in the capital cost to re-determine the tariff of Maithon Right Bank Thermal Power Plant (Units I and II - 1050 MW), Maithon Power Ltd. for the period 2011 to 2014 and 2014 to 2019.

CERC approved DVC's appeal to recover transmission charges from consumers by considering input cost of ARR while determining tariff of T&D network by the WBERC and JSERC.



BERC has ordered DISCOMs and BREDA to negotiate tariff with the bidders in the range of ₹3.05-3.15/kWh for **procurement of 250 MW solar power**. On failure to do so, the bid process shall be cancelled and

fresh bids are to be invited.



GERC has increased Fixed Charges (FC) across all categories of consumers to the level of FC as set for DGVCL in the tariff order for **TPL-Dahej**. Energy charges for categories such as NRGP, LTMD & HTP - I are reduced making the change revenue neutral. The remaining gap of ₹0.88 crore will be considered in trueing up.

Following APTEL's ruling on **TPL's petition** on account of erroneous computation of interest expenses, GERC revised ARR with a net increase of ₹6.46 crore, whose impact shall be considered while trueing up of FY 19.

GERC approved total fixed cost of ₹690.26 crore for FY 20 (Provisional), considering capital cost of ₹3615 crore for **BECL's 2×250 MW lignite based thermal power project**.

GERC has approved a cumulative Revenue Surplus of ₹10.61 crore against the petitioned cumulative Revenue Gap of ₹14.50 crore for **MUPL**. Category-wise tariff is retained at the existing level category-wise tariffs for AIVPL are fixed at same level as that for MGVC. Cumulative surplus of ₹16.18 lakh remains unadjusted.

GERC, for **GIFT PCL**, has approved net ARR of ₹28.62 crore and ₹35.50 crore for FY 20 and FY 21 respectively. Against the projected Revenue Gap of ₹11.88 crore, the Commission has approved a standalone Revenue Gap of ₹4.96 crore. The FPPPA charges have been approved at ₹1.61/kWh, as that of UGVCL.

Prompt Payment Rebate for TPL-Dahej, MUPL, AIVPL and GIFT PCL has been discontinued.

GERC, for 4 state owned DISCOMs, approved an **Additional Surcharge (AS)** of ₹0.10/kWh for consumers, who avail power through open access for the period of 1st October, 2019 - 31st March, 2020.



KSERC approved transmission charges of ₹0.39/kWh and the wheeling charge of ₹0.44/kWh, excluding the carrying cost of about ₹0.10/kWh, for the control period FY 19 to FY 22.

KSERC approved **ARR & Expected Revenue from Charges (ERC)** of M/s Infoparks Kerala for the Control Period FY 19 to FY 22 as:

| Particulars | FY 19 (₹ Lakh) | FY 20 (₹ Lakh) | FY 21 (₹ Lakh) | FY 22 (₹ Lakh) |
|-------------------|----------------|----------------|----------------|----------------|
| Total Income | 938.43 | 1082.43 | 1254.35 | 1582.50 |
| Total Expenditure | 896.52 | 1014.97 | 1147.54 | 1480.73 |
| Surplus | (-)41.91 | (-)67.46 | (-)106.81 | (-)101.77 |

KSERC has approved **levelised tariff** at ₹4.08/kWh for 8 MW SHEP of M/s Minar Renewable Energy Pvt. Ltd. Pathamkayam, Kozhikode.



MERC allowed **TPC-D** to levy category-wise revised CSS with effect from 1st July, 2019 and the resulted impact on TPC-D's revenue will be addressed in trueing up for FY 20.



MPERC has allowed **true-up of generation tariff** for AFC of ₹3.43 crore corresponding to 30% contracted capacity for MPPGCL's 2×660 SCCTP

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Station at Nigrie, district Singrauli for FY 17.



RERC has approved **RUVN's true-up** of ARR for FY 18, on which revenue gap comes out to be ₹27.56 crore, which can be recovered from the DISCOMs.

RERC has considered nil fixed cost and energy charges for FY 18 true-up for **GLPL**, as both the units 1 & 2 of GLPL were not in operation during the period.

RERC has approved total energy charges and total tariff (provisional) as ₹2.91/kWh and ₹4.718/kWh respectively for **RUVN's (CSCTPP) Units 5 & 6 (2×660 MW)** plant for FY 19. The difference amount can be recovered from the DISCOMs in 3-month installments from August 2019 onwards.

RERC has allowed RVUNL for **additional capitalization** of ₹23.96 crore in FY 20 for KSTPP Kota as follows:

| Description of Proposal | Estimated Cost (₹ crore) |
|---|--------------------------|
| Replacement of BHEL makes Pro Control P-13 SG-TG system of Unit-5 (210 MW). | 12.97 |
| Supply and ETC of variable frequency drive of ID fan motor (4 Nos.) of Unit-6&7. | 8.75 |
| Supply, Design, installation, Testing and Commissioning of online energy accounting and management system | 2.24 |



SSERC approved negotiated tariff (which is lower than the average cost of power purchase) for **8 MW Upper Rongnichu Hydropower Project** at ₹2.95/kWh and ₹3.05/kWh for first 10 years and 11th to 20th year of Project respectively.



UERC allowed **UPCL** to recover the total FCA amount of ₹47.91 crore at the average rate of ₹0.12/kWh against the estimated sales of 3868.84 MU during the second quarter of FY 20.

UERC determined the **AS** at ₹1.13/kWh to be levied w.e.f. 1st October, 2019 till 31st March, 2020 to meet the fixed cost of UPCL due to its obligation to supply electricity to the OA consumers based on the period October 2018 to March 2019.

UERC revised levelised tariff of **Tanga SHP (5 MW)**,

unit of M/s Himalaya Hydro Pvt. Ltd. as ₹6.44/kWh from ₹5.97/kWh, will be applicable w.e.f 20th March, 2017 for a period of 35 years.

Renewable Energy, RPO and REC



MNRE notified to consider energy produced using various forms of ocean energy such as tidal, wave, ocean thermal energy conversion etc. as RE and eligible for meeting the non-solar RPO.



GERC adopted the tariff discovered through **competitive bidding by GUVNL** for procurement of 500 MW solar PV from grid connected projects to be set-up in Raghnesda solar park as:

| Bidder | Quoted Capacity (MW) | Allocated Capacity (MW) | Tariff (₹/kWh) |
|--------------|----------------------|-------------------------|----------------|
| ESPL* | 200 | 200 | 2.65 |
| GSECL | 100 | 100 | 2.68 |
| GIPCL | 100 | 100 | 2.68 |
| TPREL | 200 | 100 | 2.70 |
| Total | 600 | 500 | |

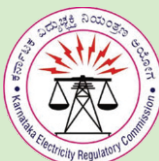
*Electro Solar Pvt. Ltd.

GERC has approved commissioning of 1 MW solar power plant by removing the restriction of 50% of contract demand as per GERC Net Metering Regulations for **Garrison Engineer (Army)** as a special case.



HPERC determined **generic levelised tariffs** for Solar Photovoltaic for first 6 months of FY 20 as:

| Capacity (MW) | Generic levelised tariff (₹/kWh) | |
|---------------|---------------------------------------|----------------------------|
| | Other than industrial and urban areas | Industrial and urban areas |
| 0 - 1 | 3.98 | 4.06 |
| 1 - 5 | 3.94 | 4.02 |



KERC determined **generic tariff** for grid connected Solar Rooftop Photovoltaic (SRTPV) projects for FY 20 as:

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| Type of Project | Tariff (₹/kWh) |
|--|----------------|
| MW scale projects < 5 MW | 3.08 |
| 1 kW to 2 MW (without capital subsidy) | 3.07 |
| 1 kW to 2 MW (with capital subsidy) | 2.32 |
| 1 kW to 10 kW for domestic consumers (without capital subsidy) | 3.99 |
| 1 kW to 10 kW for domestic consumers (with capital subsidy) | 2.97 |

Towards the fulfilment of non-solar RPO requirement of MSEDCL, MERC approved LT PP of 109 MW bagasse-based co-generation projects as below;

| Name & Location | Capacity (MW) | Rate (₹/kWh) | PPA tenure (years) |
|--|---------------|--------------|--------------------|
| M/s KM Agro Ltd., Satara | 12 | 4.75 | 20 |
| M/s Prasad Sugar & Allied Agro Products Ltd., Ahmednagar | 21 | 4.75 | 20 |
| M/s Twenty-one Sugars Ltd., Latur | 30 | 4.75 | 20 |
| M/s Cane Agro Energy India Ltd., Sangli | 36 | 4.75 | 20 |
| M/s APSK Ltd.*, Solapur | 10 | 4.75 | 20 |
| Total | 109 | | |

*Audambarraoji Patil Sakhar Karkhana Ltd.



MERC approved LT PSA and PPA between MSPGCL and MSEDCL for 7 MW at the rate of ₹3.10/kWh from M/s. Gro Solar Energy Pvt. Ltd. selected through EOI bidding process under

Mukhyamantri Saur Krishi Vaahini Yojana considering the same towards fulfilling the solar RPO target of MSEDCL.

Towards fulfilment of solar RPO targets of MSEDCL and to give day time supply to farmers under Mukhyamantri Saur Krishi Vaahini Yojana, MERC approved 25 years LT PP of additional 300 MW solar power by EESL to be developed on the spare land available in the existing MSEDCL's/ MSETCL's/ Govt./Grampanchayat lands at the rate of ₹3.00/kWh, with projected capacity of minimum 0.3 MW to maximum 10 MW.



UPERC allowed Hindustan Aeronautics Ltd. to continue to avail net metering facility under RSPV Regulations 2015 and granted the same only for specific consumers also under RSPV Regulations 2019 for solar power of 1.75 MW.

To meet the RPO targets, UPERC ordered UPPCL and its DISCOMs for LT PP from renewables and denied to contract new LT PPA after December, 2022. Any unmet load demand should be met from large hydro sources (even completing RPO targets).



UPERC approved model PPA to be signed between UPCL and selected bidders by UREDA for supply of power to UPCL from grid-connected solar PV power plants having capacity ranging from 100 kW to 5 MW on directed amendments.

Power Procurement



CSERC approved petition of CSPDCL ST PP August - September 2019 for varying quantity & price based on ToD/RTC basis as follows:

| ST PP | Utility/ Generator | Energy cost (₹/kWh) | Duration (hrs) | Quantity (MW) |
|-------|--------------------|---------------------|----------------|---------------|
| RTC | NTPC's Lara* | 4.19 | 0000 to 2400 | 300 |
| ToD | --- | 5.40 | 1800 to 2400 | 300 |
| ToD | --- | 4.90 | 0000 to 0600 | 250 |
| ToD | --- | 5.22 | 0000 to 0600 | 50 |

*if commissioned on time



GERC approved TPL's ST PP for sourcing of day power (i.e. from 0900 to 2100 hrs) for Ahmedabad, Gandhinagar and Surat License areas at GETCO periphery with tariff determined through e-tendering & reverse auction as:

| Bidder | Quantum (MW) | | Rate (₹/kWh) | |
|----------------|--------------|-----|--------------|-------|
| | April | May | April | April |
| DB Power Ltd. | 100 | 150 | 5.47 | 5.60 |
| TPL | 200 | 250 | 5.47 | 5.60 |
| PTC India Ltd. | 50 | --- | 5.47 | --- |
| TPTCL | --- | 100 | --- | 5.60 |

GERC approved capital cost of ₹1608.61 crore for Dhuvaran CCPP - III of GSECL of 376.10 MW capacity.



MERC allowed TPC-D to procure 150 MW solar power from grid connected solar PV projects through competitive bidding for 25 years, to be also considered towards fulfilment of solar RPO. Ceiling rates would be fixed as per TPC-D's own

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due diligence and the prevailing market conditions.

MERC allowed Team Ferro Alloys Pvt. Ltd. to sell power from its biomass power plant to any distribution licensee in the state at fixed cost (operating cost) of ₹0.55/kWh and variable cost determined by the generic tariff order for the respective year as its base rate.

For the MT PP from fossil fuel based CPP through competitive bidding, **MERC accorded approval** to MSEDCL to fix the ceiling rate at its own due diligence and to prepare the bidding documents with other DISCOMs assistance.

MERC approved LT PP of 109 MW from bagasse-based co-generation projects, towards fulfilment of non-solar RPO requirement of MSEDCL as below:

| Name & Location | Capacity (MW) | Rate (₹/kWh) | PPA tenure (years) |
|----------------------|---------------|--------------|--------------------|
| MSSKL*, Pune | 14 | 4.75 | 20 |
| HUTATMA*, Sangli | 24 | 4.75 | 20 |
| MAIL*, Wardha | 5 | 4.75 | 20 |
| SSSAIL**, Ahmednagar | 12 | 4.75 | 20 |
| Total | 55 | | |

*The Malegaon Sahakari Sakhar Karkhana Ltd., *Padmabhushan Krantiveer Dr. Nagnathanna Nayakawadi Hutatma Kisan Ahir Sahakari Sakhar Karkhana Ltd., *Manas Agro Industries & Infrastructure Ltd., ** Swami Samarth Sugar & Agro Industries Ltd.

MERC allowed Maharashtra Airport Development Company Ltd. (MADC) for ST PP from 1st September, 2019 to 31st August, 2020 through competitive bidding via e-bidding portal and also allowed to procure any additional power required more than PP plan via IEX.

MSEDCL got approval from MERC to procure all of their surplus power from CPP (conventional) for FY 20 and FY 21 through reverse bidding process.

MERC gave consent to MADC to procure power from single bidder (MSEDCL) at a rate of ₹4.89/kWh by executing 1-year ST PPA from 1st September, 2019 to 31st August, 2020.



PSERC ordered to continue existing AS of ₹1.198/kWh for the OA consumers as per the order dated 06th September, 2019 (that earlier applicable upto 30th September, 2019) till further order.



UERC approved model PPA to be signed between UPCL and selected bidders for supply of power from Pine

Leaves' based power projects having capacity ranging from 25 kW to 125 kW.

UERC approved draft Power Banking Agreement (PBA) to be signed between UPCL and M/s GMR Energy Pvt. Ltd., M/s Kreate Energy (I) Pvt. Ltd. and M/s Arunachal Pradesh Power Corporation Pvt. Ltd. for 679.20 MU power supply on firm basis and upto 367.20 MU on "as and when" basis, from May 2019 to September 2019 which will be received back during the period October 2019 to March 2020.



WBERC allowed WBSEDCL to purchase 300 MW power from 3×150 MW Haldia TPS of HEL on mutually agreed provisional tariff and determine pending tariff through ARR with the applicable discount of 7 paisa/kWh.

WBERC approved WBSEDCL to purchase 40 MW power from cogeneration plant of BEL at revised rate of 303 paisa/kWh for one-third energy from 10th August, 2015 and set the minimum price at 255 paisa/kWh for two-third energy.

Other

CERC decided the slabs for PoC rates and transmission losses for LTA, MTOA range from ₹79,503/MW/Month to ₹4,49,264/MW/Month and for STOA range from 0.10 paise/kWh to 33.74 paise/kWh for the period of July 2019 to September 2019.

CERC directed to implement Automatic Generation Control (AGC) to all thermal ISGS stations with installed capacity of 200 MW and above, and all hydro stations (more than 25 MW) excluding the Run-of-River Hydro Projects irrespective of size and whose tariff is determined or adopted by CERC for reliable and safe grid operations.

CERC permitted NHPC to renovate and modernize 105 MW Loktak Power Station in Manipur at the total cost of ₹273.59 crore and allowed increased design energy of 562.73 MU against the existing design energy of 448 MU post R&M.

CERC issued Category 'I' licence to NTPC Ltd. for inter-State trading in electricity in whole of India to be enabled for executing MNRE's plan of 20000 MW power bidding for solar power projects' installation.

CERC permitted NHPC Ltd to inject infirm power into the grid for testing (including full load and trial run) of 800 MW (4×200 MW) Parbati Hydroelectric Project, Stage - II upto 31st August, 2020 or actual COD, whichever is earlier.

CERC allowed Nabinagar Power Generating Company Ltd to

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inject infirm power into the grid for testing including full load test of Unit - I of Nabinagar STPS Stage - I (3×660 MW) till 31st December, 2019 or actual COD, whichever is earlier.

CERC allowed OPGCL to inject infirm power into the grid for testing including full load test of Unit - IV of 1740 MW of Thermal Power Project at Jharsuguda, Odisha upto 23rd October, 2019 or actual COD, whichever is earlier.

MNRE defined benchmark costs for Grid Connected Rooftop solar power plants for FY 20 as:

| Capacity | Benchmark cost (₹/Wp) other than special category states | Benchmark cost (₹/Wp) for special category states* |
|----------------------|--|--|
| > 1 kW upto 10 kW | 54 | 59 |
| >10 kW upto 100 kW | 48 | 53 |
| > 100 kW upto 500 kW | 45 | 50 |

*North Eastern States, Hilly States of Uttarakhand, Himachal Pradesh, J&K and UTs of Andaman & Nicobar Island and Lakshadweep

DERC amended its order for determination of Open Access charges and related matters dated 1st June, 2017 and substituted the AS given as:

| Capacity | Power Purchase (MU) | Fixed Cost (₹ Cr.) | Fixed cost (₹/kWh) | AS (Paise/kWh) | |
|----------|---------------------|--------------------|--------------------|----------------|-----------|
| | | | | Oct.-Apr. | May-Sept. |
| TPDDL | 10430 | 1837 | 1.76 | 176 | 88 |
| BRPL | 14063 | 2049 | 1.46 | 146 | 73 |
| BYPL | 8331 | 1071 | 1.29 | 129 | 64.5 |

KERC allowed ESCOMs to collect FAC charge/kWh of sales to consumers from 31st October, 2019 to 31st December,

| ESCOM | BESCOM | MESCOM | CESC | HESCOM | GESCOM |
|-----------------|--------|--------|------|--------|--------|
| FAC (paise/kWh) | 11 | 10 | 12 | 9 | 11 |

JSERC has ordered for **Delayed Payment Surcharge realized on Annual Minimum Guarantee charges** to be adjusted/paid in the account of TSL along with interest at a rate of 6% per annum within ninety days of the order.

KSERC ordered M/s Thrissur Corporation Electricity Department (TCED) to keep the trued up revenue surplus of ₹650.38 lakh in a separate fund for FY 17.

KSERC has allowed **supervision charges** for shifting of installation of KSEB for NHAI Bharatmala Pariyojana Project in state of Kerala as 2.5% of total approved cost of project.

MERC rejected the claim of Western Precicast Pvt. Ltd. and Jsons Foundry Pvt. Ltd. for the banked energy over and above the contract demand.

MERC directed MSEDCL to purchase the surplus units generated by wind projects of ITC Ltd. for FY 17 as per the provisions of DOA Regulations, 2016 while rejecting the same prior to FY 17.

MERC considered APML to be entitled for the compensation due to shortfall in coal supply by Lohara Coal Block for 800 MW capacity in the 1320 MW PPA dated 8th September, 2008 and allowed to levy the carrying cost at the rate applicable for working capital interest calculations as per MYT Regulation, 2015.

MERC approved the amended agreement proposed by VIPL-G to be executed between VIPL-G and AEML-D for a discount of 4 paise/kWh to the consumers for the balance period of the PPA.

MERC addressed MSPGCL's proposal to replace Koradi Units 11 & 12 of 2×660 MW with 6 old thermal generating Units of 1250 MW subjected to optimize the capital cost.

UPERC granted intra-state transmission license to M/s Powergrid Jawaharpur Firozabad Transmission Ltd. (fully owned subsidiary of PGCIL) and Obra 'C' Badaun Transmission Ltd.

TNERC determined subsidy payable by Govt. of Tamil Nadu for FY 20 as ₹8430.13 crore.

Tariff Orders

| State/Union Territory (SERC) | Licensee/Utility | True-up | Annual Performance Review (APR) | Aggregate Revenue Requirement (ARR) | Tariff |
|------------------------------|---------------------------------------|---------|---------------------------------|-------------------------------------|--------|
| Delhi (DERC) | BSESYPL, BSESRPL, NDMC | FY 18 | --- | FY 20 | FY 20 |
| | TPDDL, DTL, IPGCL (GTPS), PPCL(PPS-I) | FY 18 | --- | FY 20 | --- |
| Gujarat (GERC) | TPL-D(D)*, MUPL, AIVPL, GIFT PCL* | FY 18 | --- | FY 20 | FY 20 |
| Rajasthan (RERC) | RVPN, SLDC | FY 18 | --- | FY 20 | --- |
| Uttar Pradesh (UPERC) | DVVNL, MVVNL, PVVNL, PuVVNL | FY 18 | FY 19 | FY 20 | FY 20 |
| | KESCO | FY 17 | FY 18 to FY 19 | FY 20 | FY 20 |

*MTR of ARR for FY 20 and FY 21; except SLDC

Regulations

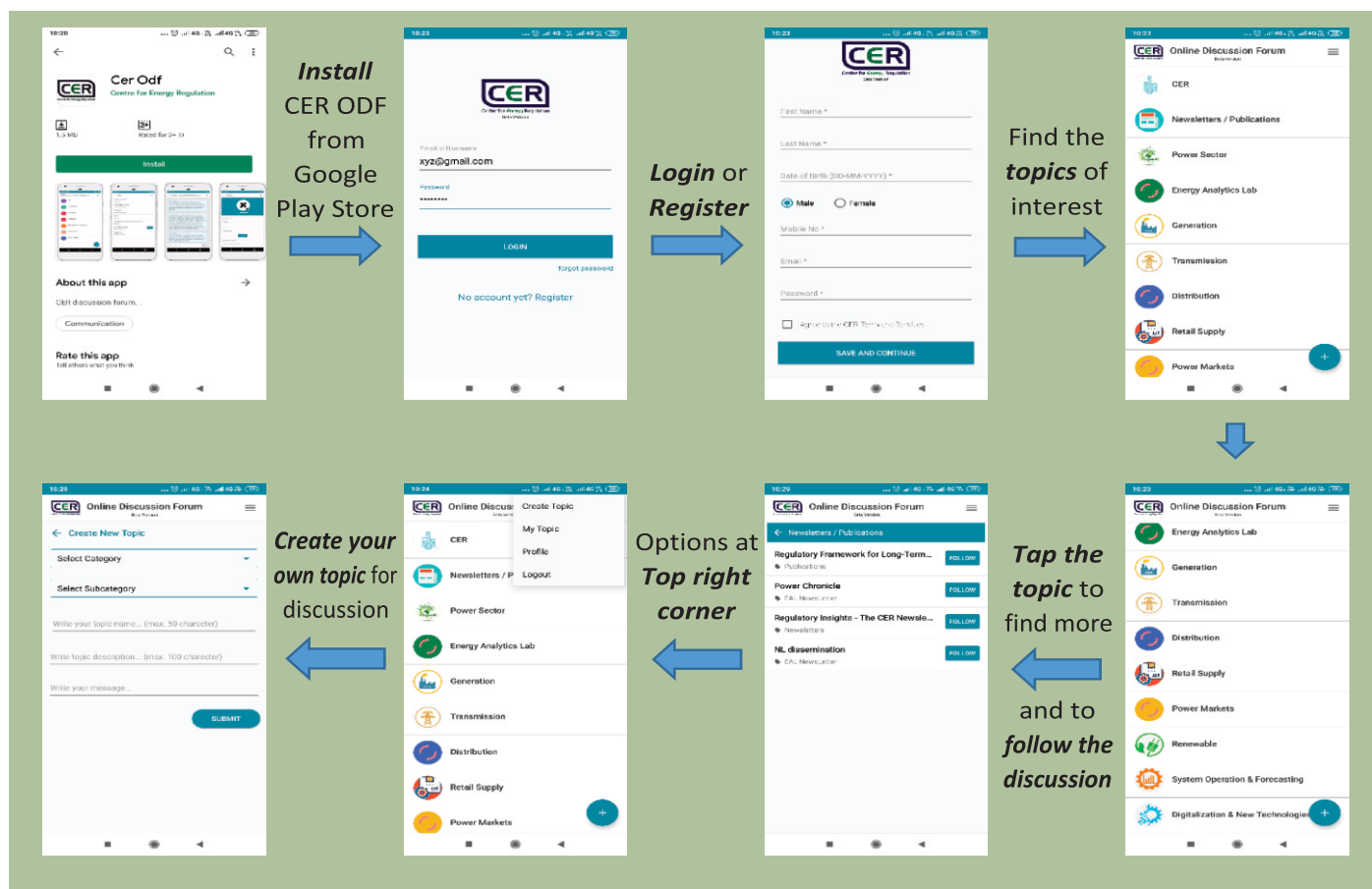
| Title | Date of Approval/Notification |
|--|----------------------------------|
| Tariff | |
| Himachal Pradesh Electricity Regulatory Commission (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination (Third Amendment) Regulations, 2019 [Draft] | 31 st July, 2019 |
| Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2019 | 1 st August, 2019 |
| Renewable Energy (including RPO and REC) | |
| KSERC (Renewable Energy and Net Metering) Regulations, 2019 (modified) [Draft] | 30 th August, 2019 |
| Chhattisgarh State Electricity Regulatory Commission (Terms and conditions for determination of generation tariff and related matters for electricity generated by plants based on renewable energy sources) Regulations, 2019 | 22 nd July, 2019 |
| UPERC (Promotion of Green Energy through RPO) (First Amendment), Regulations, 2019 | 16 th August, 2019 |
| UPERC (Captive and Renewable Energy Generating Plants), Regulations, 2019 | 15 th July, 2019 |
| Codes | |
| Bihar Electricity Supply Code, 2007 [Draft] | 1 st August, 2019 |
| KSERC (Kerala State Electricity Grid Code) Regulations, 2019 [Draft] | 30 th July, 2019 |
| Kerala Electricity Supply Code, 2014 | 1 st August, 2019 |
| Tamil Nadu Electricity Distribution Code | 9 th July, 2019 |
| Amendment to the Tamil Nadu Electricity Supply Code [Draft] | 9 th July, 2019 |
| JERC, Manipur & Mizoram Electricity Supply Code(Twelfth Amendment) Regulations, 2019 | 9 th July, 2019 |
| JERC, Manipur & Mizoram Electricity Supply Code(Thirteenth Amendment) Regulations, 2019 | 17 th July, 2019 |
| Others | |
| Consultative Paper on BERC (Standards of Performance of Intra-State Transmission Licensees) Regulations, 2019 [Draft]. | 19 th July, 2019 |
| NERC (Demand Side Management) Regulations, 2019 | 2 nd August, 2019 |
| West Bengal Electricity Regulatory Commission (Open Access) (Amendment) Regulations, 2019 [Draft] | 6 th August, 2019 |
| Previous publication for amendment of existing OERC (Licensees Standards of Performance) Regulation, 2004 | 31 st August, 2019 |
| KSERC (Power Quality for Distribution System) Regulations, 2019 | 9 th August, 2019 |
| TERC Power Quality - Regulations, 2019 [Draft] | 19 th September, 2019 |
| Uttar Pradesh Electricity Regulatory Commission (Conduct of Business) Regulations, 2019 [Draft] | September, 2019 |
| UERC (Guidelines for Appointment of Members and Procedure to be followed by the Forum for Redressal of Grievances of the Consumers) (First Amendment) Regulations, 2019 [Draft] | 10 th July, 2019 |
| KERC (Recovery of Expenditure for Supply of Electricity) (Tenth Amendment) Regulations, 2019 [Draft] | 29 th July, 2019 |
| CERC (Power System Development Fund) Regulations, 2019 | 28 th August, 2019 |
| CERC (Procedure, Terms and Conditions for grant of trading license and other related matters) Regulations, 2019 [Draft] | 24 th July, 2019 |
| HERC (Communication System for Intra-State transmission of Electricity) Regulations, 2019 | 16 th July, 2019 |
| HPERC (Consumer Grievances Redressal Forum and Ombudsman) Regulations, 2013 | 24 th September, 2019 |
| Punjab State Electricity Regulatory Commission (Fee) (Third Amendment) Regulations, 2019 [Draft] | September, 2019 |
| CERC (Sharing of Revenue Derived from Utilization of Transmission Assets for Other Business) Regulations, 2019 [Draft] | 25 th September, 2019 |
| CERC Indian Electricity Grid Code (Sixth Amendment) Regulations, 2010 [Draft] | 6 th August, 2019 |
| CERC Power Market (Second Amendment) Regulations, 2010 [Draft] | 6 th August, 2019 |
| CERC Open Access in Inter-State Transmission (Sixth Amendment) Regulations, 2008 [Draft] | 6 th August, 2019 |

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

CER's Online Discussion Forum (ODF)

CER developed an Android application for Online Discussion Forum (ODF) to promote active peer-to-peer interaction and learning amongst stakeholders covering Electricity Regulatory Commissions, experts, generation, transmission, distribution and trading licensees, investors, researchers, learners etc. The aim of this initiative is to create a powerful network for sharing views and experiences related to relevant and emerging topics in the power sector. The CER's ODF App can be freely downloaded from Google Play Store. The ODF would also continue to be accessible through its webpage cer.iitk.ac.in/Login

CER's ODF App – Installation and Use



❖ CER invites volunteers for moderating various discussions threads of CER's ODF. Please write to us.

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

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Other Initiatives



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