



REGULATORY INSIGHTS



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Editorial

It gives me immense pleasure to present the first issue of **Regulatory Insights**, the quarterly newsletter of Centre for Energy Regulation (CER). Each issue aims to bring insights into key regulatory and policy developments in the power sector, accompanied with analysis based on CER's Regulatory Database. **ERC Tracker**, comprising regulatory updates and tariff orders, would be a constant feature of the Regulatory Insights. **CER Opinion** is a special feature of the newsletter as it presents the views of CER on regulatory and policy developments – draft as well as notified. We expect discussions on such developments and other topics of interest to continue on the **Online Discussion Forum** of the Centre, and hope that these opinions and discussions would serve as useful inputs for regulators and policy makers.

Development of offshore wind power generation capacity must be undertaken on a competitive basis and may initially be supported by viability gap funding (VGF), which should also be used as the bidding parameter. With respect to CERC's consultation paper on Terms and Conditions of Tariff Regulations, we suggest replacement of incentive on early completion of projects with penalty for delay, benchmarking of capital cost and operational parameters, and periodical revision of ROE using appropriate risk evaluation approach. Adoption of market prices for frequency deviations under the DSM mechanism needs to be strengthened by setting up of analogous and effective intra-state ABT regime across the country. Further, we suggest adoption of area-specific Market Clearing Price (MCP) in the case of market splitting, and highlight the need for smoothening the transition from existing price vector to a rather steeper price vector.

The proposed amendments to the Tariff Policy 2016, being an important policy instrument guiding tariff determination by the ERCs, need to be further evaluated as some of the proposed amendments may have far-reaching implications on competition and efficiency in the sector. Specific suggestions include delinking of operational norms from past performance, adoption of a regulatory framework for demand forecasting and efficient power procurement planning by utilities, and using RECs as an RPO compliance mechanism and strengthening the REC market. The detailed analyses of the issues and the submissions can be accessed on the web portal of CER.

Anoop Singh

Coordinator, Centre for Energy Regulation

The Centre is seed funded by the Government of United Kingdom through a programme titled 'Supporting Structural Reforms in the Indian Power Sector' under Power Sector Reforms (PSR) programme.



UK Government

Offshore Wind

Key Initiatives

- Facilitating offshore wind in INDIA (FOWIND) consortium as a part of Indo-European Cooperation on Renewable Energy programme – a roadmap for offshore wind in India
- First Offshore Wind Project of India (FOWPI) under ‘Clean Energy Cooperation with India (CECI)’

Driven by emission reduction targets, offshore wind farms are being promoted worldwide as oceans offer higher wind speeds. India, with its vast coastline of 7517 km and significant experience in onshore wind development, is ready to take the next leap. Ministry of New and Renewable Energy (MNRE) notified [National Offshore Wind Energy Policy](#) on 6th October, 2015. More recently, an [offshore installation target](#) of 5 GW by 2022 and 30 GW by 2030 was set by the Ministry. NIWE shall demarcate sea blocks for open international competitive bidding and take in-principle clearances from the Ministries of Defence, Home Affairs, External Affairs, Environment and Forests and the Department of Space. Offshore wind farms have to be mandatorily declared as restricted areas by the Directorate General of Shipping. The successful bidder/developer, facilitated by NIWE,

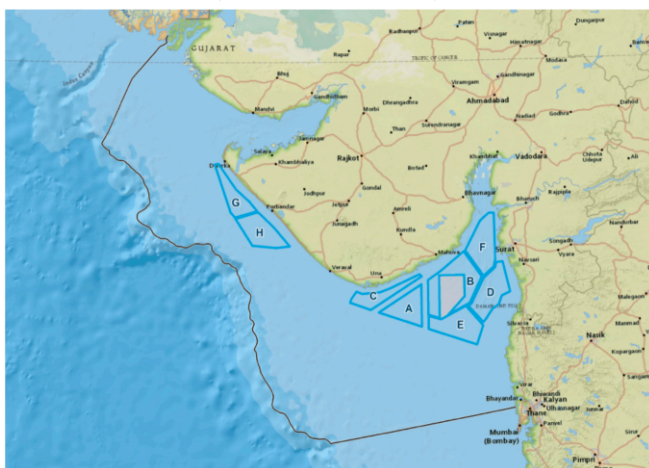
must also take clearances/NOCs from over ten Central/State government ministries/departments.

- Capacity: 1000 MW
- Location: Earlier restricted to Gulf of Khambat, later extended to the EEZ of India
- Offtake: To be traded through a designated Govt. agency through a 25-year PPA
- Evacuation Infrastructure:
 - Offshore (up to CTU/STU Network): Developer
 - Onshore: CTU/STU

NIWE also invited private sector players to [conduct offshore studies and surveys](#).

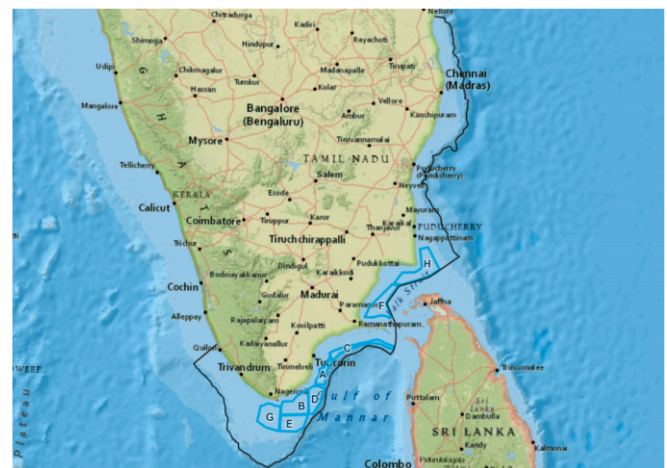


(Western Coastline)



Potential Offshore Sites

(Southern Coastline)



Source: FOWIND, 2016

CER Opinion

- ❖ Competitive bidding for offshore wind should be the only basis for its development.
- ❖ Cost of dedicated transmission line from offshore pooling station to the CTU/STU network can be supported by viability gap funding from the corresponding Regional Deviation Pool Account

Fund. A specific normative amount should be pre-specified in the bid document.

- ❖ NLDC should, in cooperation with IMD and NIWE, set up a dedicated centre for monitoring and forecasting of generation.

Amendments to Tariff Policy, 2016 (Draft)

The key aspects of the [Draft Amendments to Tariff Policy 2016](#) released by Ministry of Power are:

- Distribution licensees to show the respective commissions their capability to meet the annual average power requirement in their area of supply through long- and medium-term PPAs
- Capping of AT&C losses at 15% for the determination of tariff for the upcoming tariff period, to be further reduced to 10% within the next three years thereafter
- Subsidy, if any, to be provided in the form of Direct Benefit Transfer, subject to tariff of the subsidised consumer being within $\pm 20\%$ (50% if the monthly consumption is below 60 units) of the average cost of supply (ACoS)
- Smart metering and prepaid payment mechanism to be adopted in the next three years, and Time of Day (TOD) tariff to be introduced not later than 1st April, 2019
- A tariff framework to be designed for EV charging stations with single part tariff less than or equal to the ACoS
- Major consumer categories to be restricted to five viz. domestic, commercial, agricultural, industrial and institutional, with sub-categorisation based on voltage level
- For domestic and agricultural consumers, at least 50% (75% for other categories) of the fixed cost to be recovered through the fixed charge component of tariff
- Liability of open access consumers to pay cross subsidy surcharge to be limited for a period of maximum one year from the date of open access agreement
- Adjustment of wheeling losses in the distribution network in scheduling to be made as per the SERC regulations

CER Opinion

- ❖ The tariff principles should emphasise competition and efficiency in the sector.
- ❖ To optimise power purchase cost, trade of un-requisitioned power, separately for peak and off-peak hours, should be promoted through competitive bidding.
- ❖ SERCs should have the flexibility to adopt more stringent operational and financial norms than those laid by CEA/CERC. Operational norms should be delinked from past performance.
- ❖ MYT Regulations should continue to provide for sharing of benefits from performance improvement of utilities.
- ❖ A regulatory framework for demand forecasting and efficient power procurement planning should be adopted.
- ❖ To manage the underutilisation of generation capacity resulting in un-requisitioned surplus, the policy should provide for intra- and inter-regional reassignment/swapping of capacity under existing PPAs by DISCOMs.
- ❖ Adoption of RECs as a tool for RPO compliance would deepen the REC market.
- ❖ TOD tariff should be adopted for EV charging by all consumers. A separate category may be created for EV charging stations.
- ❖ Reliability-based tariff and TOD tariff should be implemented for consumers with load above 10 kW across all consumer categories.
- ❖ Direct benefit transfer, which would not only help reduce the subsidy burden of the State Government but also address inefficient consumption, should be implemented in a transparent manner.
- ❖ Deployment of smart energy meters should be based on a cost-benefit analysis and follow an implementation strategy targeting large consumers in a stratified manner. Prepaid meters must be mandated for defaulters and temporary users.
- ❖ Distribution utilities should adopt a bottom-up approach by setting distribution transformer level AT&C loss reduction targets.

Terms and Conditions of Tariff Regulations (Consultation Paper)

Central Electricity Regulatory Commission (CERC) released a consultation paper on [Terms and Conditions of Tariff Regulations](#) for 2019-24 commencing from 1st April, 2019, emphasising the following points:

- Increasing the proportion of normative parameters in cost of service approach (13)
- Reduction in rate of return on equity to address delays in commissioning of projects (18)
- Review of pass-through of interest on debt to encourage developers for optimising the same (19)
- Review of normative Operation and Maintenance

- (O&M) expenses to account for overlap with other cost components (20.3 c & d, 11.6 iv), increase in O&M expenses due to cost overrun (21.2), variation with despatch (21.3), dependence on life expectancy/vintage (21.6), etc.
- Appropriate allocation of risks to the coal company, railways and generating stations to address the degradation of GCV of coal (22, 26.3.16 – 26.3.18), besides a review and standardisation of the landed cost of fuel (24, 5–H)
- Availability linked recovery of fixed charges, being an annual cumulative process, leaves gaps for manipulation (26.3.11 – 26.3.15)
- Need of a regulatory framework for normative transmission losses along with the review of

Normative Annual Transmission Availability Factor (26.5.6 – 26.5.7)

- Revision of rate of revenue from telecom businesses, fixed at ₹3000/km in 2007 (31.2)
- Standardisation of bundling of renewable energy tariff with existing thermal power plants (34)
- Separation of commercial operation date and service start date (35)
- Incorporation of energy storage systems in the regulatory framework (36)
- Benchmarking of capital costs, annual fixed costs and its components; bundling of cost components into 'O&M' and 'Others' and assigning normative deceleration/escalation factors (37)

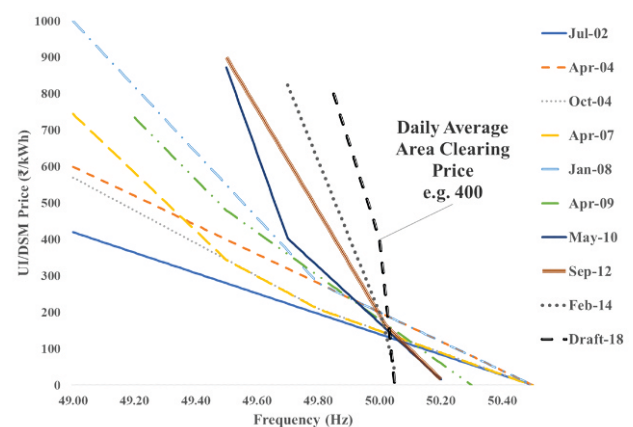
CER Opinion

- ❖ Incentive on early completion of project should be replaced with penalty for delay as the current framework places additional burden on consumers but allows full recovery of ROE even in case of delayed projects.
- ❖ Benchmarking of capital and operating costs should be based on best national and international practices.

- ❖ Technical minimum operating capacity and heat rate compensation for operating below normative level should be fixed based on a certified third party assessment.
- ❖ Allowable ROE should be periodically revised as per appropriate risk evaluation approach.

Deviation Settlement Mechanism and Related Matters (4th Amendment) Regulations, 2018 (Draft)

The Draft Amendment to CERC (Deviation Settlement Mechanism and related matters) Regulations, 2014 proposes a dynamic slope for the DSM rate vector as determined by joining the daily average Area Clearing Price (ACP) at 50 Hz with ₹8/kWh at 49.85 Hz and ₹0/kWh at 50.05 Hz in steps of 0.01 Hz, with the ceiling of ₹8/kWh at 50 Hz. The draft also proposes to modify the existing limit of sustained deviation in one direction from 12 time blocks to 6, and restrict the total daily deviation from scheduled energy to 3% of the total schedule for drawee entities and to 1% of the total schedule for generating entities. This may result in the steepest DSM price vector so far (see figure).



Source: CERC Regulations and Draft Amendments

CER Opinion

- ❖ Area-specific Market Clearing Price (MCP) can be used for differentiated DSM price vector in the case of market splitting.
- ❖ The ultimate goal should be a vibrant ancillary services market that renders DSM 'irrelevant'.
- ❖ The resultant short-term spurt in price vector may need to be smoothed by migrating gradually from

the existing deviation price to ACP in a period of 6 months or so.

- ❖ Effectiveness of an inter-state DSM needs to be supported with an analogous and effective intra-state ABT regime that should also be reflected in RE deviations.

Regulatory Updates

Tariff Orders



Continuing with the mechanism for calculation of rate of free power availed by HPSEBL from Government of Himachal Pradesh, HPERC released an order fixing the rate at ₹2.48/kWh for 2018-19.

HPERC released orders specifying the generic levelised tariff for small hydro projects and solar PV projects as:

Small hydro Capacity (MW)	Tariff (₹/kWh)	Solar Capacity (MW)	Tariff (₹/kWh)
0.1 – 2	3.79	<1	4.31
2 – 5	3.61	1 – 5	4.25
5 – 25	3.44		



RERC approved project-specific tariff for upcoming MSW-to-energy plants at Jaipur and Jodhpur, and tariff for 4.95 MW bagasse-based power plant (RSGSML) at Jaipur.

Utility	Tariff (₹/kWh)
JVVNL, Langariawas, Jaipur	7.31
JdVVNL, Keru dumpsite, Jodhpur	7.43
RSGSML, Jaipur	5.53 (without AD), 5.35 (with AD)



TNERC approved generic tariff for wind and solar power, and comprehensive tariff for biomass and bagasse-based power plants.

	Tariff (₹/kWh)
Wind	2.80 (with AD), 2.86 (without AD)
Solar PV	3.05 (with AD), 3.11 (without AD)
Biomass-based	5.89 (2018-19), 6.11 (2019-20)
Bagasse-based	5.36 (2018-19), 5.53 (2019-20)



KERC approved generic tariff for wind power projects, mini-hydel, bagasse-based cogeneration, Rankine cycle-based biomass renewable energy power projects, and wheeling and banking charges for renewable power projects.

	Tariff	₹/kWh		
		FY 2018-19	FY 2019-20	FY 2020-21
Wind (<25 MW)	Generic Tariff	3.45		
Mini-hydel	Levelised Tariff	3.95		
Bagasse-based cogeneration	Levelised FC	1.77		
	Variable Cost	1.82	1.92	2.03
Rankie cycle-based biomass (water-cooled)	Levelised FC	2.19		
	Variable Cost	3.36	3.55	3.76
Rankine cycle-based biomass (air-cooled)	Levelised FC	2.07		
	Variable Cost	3.28	3.47	3.66



JERC (Manipur and Mizoram) revised the levelised tariff for rooftop solar power plants, considering subsidy on normative cost instead of a benchmark cost of ₹75000.

Capacity (kW)	1-8	8-50	50-150	150-500	500-1000	
Capital Cost (₹'000/kW)	82.50	79.60	76.10	73.70	69.80	
Levelised Tariff (₹/kWh)	Without subsidy	9.39	9.11	8.77	8.53	8.15
	With 70% subsidy	3.73	3.65	3.55	3.48	3.36
	With 30% subsidy	6.97	6.77	6.53	6.36	6.10



GERC issued an order for the determination of tariff for power procurement from bagasse-based cogeneration and biomass-based power projects.

	Levelised Fixed Charge (₹/kWh)	Variable Charge (₹/kWh)		
		2017-18	2018-19	2019-20
Biomass (water-cooled)	1.80 (without AD)	3.63	3.82	4.01
	1.65 (with AD)			
Biomass (air-cooled)	1.91 (without AD)	3.78	3.97	4.17
	1.65 (with AD)			
Bagasse-based cogeneration	1.90 (without AD)	3.63	3.81	4.00
	1.74 (with AD)			

Other Updates

UERC relaxed Uttarakhand SLDC accounts' calculations to monthly basis and provided relaxation from UERC (Deviation Settlement Mechanism and related matters) Regulations, 2017 from 1st April, 2018 to 1st April, 2019, accepting the SLDC's petition for relaxation of one year for implementation of intra-state ABT and DSM.



MERC issued an intra-state trading licence (Category A) for trading in Maharashtra for a period of 25 years.



UPERC granted UPPCL a time extension up to September, 2018 for updating billing and metering software to implement the new TOD tariff structure.



TSERC approved voltage-wise DISCOM-wise cross-subsidy surcharge and additional surcharge with solar power producers exempted from the same.



DISCOM	CSS (₹/kWh)	AS (₹/kWh)
SPDCL	0.36-2.76	0.52
NPDCCL	0.21-3.55	

Tariff Orders (2018)

State/Union Territory (SERC)	Licensee/Utility	True-up	Annual Performance Review (APR)	Aggregate Revenue Requirement (ARR) and Tariff
Assam (AERC)	APDCL, APGCL, AEGCL	2016-17	2017-18	2018-19
Bihar (BERC)	SBPDCL, NBPDC	2016-17	2017-18	2018-19
	BSPGCL	2016-17	2017-18	2018-19
	BGCL, SLDC, BSPTCL	2016-17, NA, 2016-17 respectively	2017-18	2018-19
Chhattisgarh (CSERC)	CSPDCL (CSPDCL, CSPTCL, CSPGCL, CSLDC)	2016-17	---	2018-19
Delhi (DERC)	BYPL, BRPL, NDMC, TPPDL, DTL, IPGCL, PPCL	2016-17	---	2018-19 (TPPDL), Revised ARR 2017-18 (NDMC)
Gujarat (GERC)	MUPL, TPL-Dahej, Ahmedabad, Surat	2016-17	---	2018-19
	SLDC, GETCO, GSECL	2016-17	---	2018-19
	UGVCL, DGVCL, MGVCL, PGVCL	2016-17	---	2018-19
HP (HPERC)	HPSEBL	2015-16	---	2018-19, MYT 2015-2019
Jharkhand (JSERC)	TSL	2015-16	2016-17	2017-18
	DVC Command Area of Jharkhand	2015-16	---	MYT ARR 2016-17 to 2020-21, Tariff 2016-17
	JSEB, JBVNL	2011-12 to 2013-14, 2013-14 to 2015-16 respectively	NA, 2016-17 respectively	NA, MYT 2017-18 to 2018-19
	IPL	2015-16	---	---
	JUSNL	---	---	MYT ARR 2016-17 to 2020-21, Tariff 2016-17
	APNRL	2014-15 to 2015-16	---	MTY 2016-17 to 2020-21
	TPCL	2015-16	---	MTY 2016-17 to 2020-21
Karnataka (KERC)	BESCOM, HESCOM, MESCOM, GESCOM, CESC, AEQS	2016-17	---	2018-19
	MSEZ	---	---	2018-19
	KPTCL, HRECS	2016-17	---	2018-19 (revised)
Madhya Pradesh (MPERC)	MPEZ, MPWZ, MPCZ, MPPMCL	---	---	2018-19
Maharashtra (MERC)	TPC - D	---	---	MYT 2018-19 to 2024-25
	GEPL	---	---	MYT 2016-17 to 2019-20
Manipur and Mizoram (JERC for the states of Manipur and Mizoram)	MSPCL, MSPDCL, Power and Electricity Department, Government of Mizoram	2016-17	---	MYT ARR 2018-19 to 2022-23, Tariff 2018-19
Meghalaya (MSERC)	MePDCL, MePTCL, MePGCL	---	---	MYT ARR 2018-19 to 2020-21, Tariff 2018-19
Odisha (OERC)	NESCO Utility, WESCO Utility, SOUTHCO Utility and CESU	---	---	2018-19
Punjab (PSERC)	PSPCL, PSTCL	2016-17	2017-18	2018-19

State/Union Territory (SERC)	Licensee/Utility	True-up	Annual Performance Review (APR)	Aggregate Revenue Requirement (ARR) and Tariff
Rajasthan (RERC)	RVPN (JVVNL, AVVNL, JdVVNL)	2016-17	---	2018-19
	RVUN	2016-17	---	2018-19
Sikkim (SSERC)	Energy and Power Department, Government of Sikkim	2016-17 (provisional)	2017-18	MYT ARR 2018-19 to 2020-21, Tariff 2018-19
Telangana (TSERC)	CESS Siricilla, TSSPDCL and TSNPDCL	---	---	2018-19
Uttar Pradesh (UPERC)	NPCL	2015-16	---	MYT 2017-18 to 2019-20
	UPPTCL, MVVNL+PuVVNL+PVVNL+DVVNL+KESCO	2014-15	---	MYT 2017-18 to 2019-20
Uttarakhand (UERC)	UPCL, PTUCL, UJVNL	2016-17	2017-18	2018-19
	SLDC, GIPL, SEPL, GBHPPL	NA, 2015-16 and 2016-17, 2016-17, 2015-16 and 2016-17 respectively	2017-18	2018-19
Goa, Andaman & Nicobar Islands, Lakshadweep, Chandigarh, Daman & Diu, Dadra & Nagar Haveli, Puducherry (JERC for the state of Goa and Union Territories)	Chandigarh Electricity Department	2016-17	2017-18	2018-19
	Electricity Department, Government of Goa	2013-14	---	2018-19
	Electricity Department, Government of Puducherry	2016-17	2017-18	2018-19
	Electricity Department, Lakshadweep Administration	---	2017-18	2018-19
	Puducherry Power Corporation Limited	2015-16	---	2018-19
	Electricity Department of Daman and Diu	2016-17	2017-18	2018-19
	Electricity Department, Andaman and Nicobar Administration	2014-15	2017-18	2018-19
	DNH Power Distribution Corporation Limited	2016-17	2017-18	2018-19
Electricity Department, UT of Dadra and Nagar Haveli (Transmission Division)	2014-15, 2015-16, 2016-17	2017-18	2018-19	

Draft Regulations

Title of Draft Regulation	Date of Approval	Last Date for Submission of comments/suggestions/objections
HPERC (Deviation Settlement Mechanism and related Matters) Regulations, 2018	27/06/2018	---
DERC (Supply Code and Performance Standards) (Second Amendment) Regulations, 2018	04/07/2018	08/08/2018
Draft AERC (Forecasting, Scheduling, Deviation Settlement and Related Matters of Solar and Wind Generation Sources) Regulations, 2018	25/06/2018	25/07/2018
AERC (Electricity Grid Code) Regulations, 2018	30/06/2018	---
CERC (Terms and Conditions of Tariff) Regulations, 2018	---	31/07/2018
CERC (Deviation Settlement Mechanism and related matters) Regulations, 2018	29/06/2018	31/07/2018
JSERC (Operation of Parallel Licensees) Regulations, 2018	25/04/2018	---
Draft JSERC (Procedure, Terms & conditions for the Grant of Transmission licensee and other related matters) Regulations, 2018	---	---

Launch of the Centre

Centre for Energy Regulation (CER), India's first centre dedicated to regulatory research in energy sector, was set up by Department of Industrial and Management Engineering, Indian Institute of Technology Kanpur. The Centre's launch ceremony was held in New Delhi on 17th May, 2018. Shri P. K. Pujari, Chairperson, CERC, launched the Centre by unveiling its logo and web portal in the presence of other dignitaries including Shri A. K. Bhalla, Secretary, Ministry of Power, Shri R. C. Bhargava, Chairman, Board of Governors, IIT Kanpur, and Mr. Gavin McGillivray, Head of UK Department for International Development



CER Launch



Panel Discussion

(DFID), India. Shri P. K. Pujari and Shri A. K. Bhalla applauded this unique initiative of IIT Kanpur and said that the Centre would play a key and independent advisory role in policy and regulatory matters. The launch was followed by a panel discussion. As panellists, Shri Anand Kumar, Chairman, Gujarat Electricity Regulatory Commission, Mr. Pankaj Batra, Member, Central Electricity Authority, Ms. Sandy Sheard, Counsellor, British High Commission, and Mr. Ghanshyam Prasad, Chief Engineer, Ministry of Power, suggested ways of engaging with ERCs for institutional sustainability of the Centre.

Regulatory Research Camp

The Centre is organising its first Regulatory Research Camp (RRC) in July, 2018. This five-day camp would deliberate on key aspects related to 'Regulatory Framework for Long-term Demand Forecasting and Power Procurement Planning'. The participants include officials from various SERCs, DISCOMs and academia. Participants and experts are expected to discuss and propose a broad framework for formulating a model regulation on long-term demand forecasting and power procurement planning with state-specific parameters under consideration. The group would review existing regulations and guidelines across selected states and the best international practices in the sector.

Online Discussion Forum

Online Discussion Forum (ODF) of CER is a platform for exchanging ideas, knowledge and data among energy sector professionals and academia. Accessible after registration at the CER portal, the forum allows creation of new topics and threads across a number of categories. The forum, currently accessible through web, is intended to be modelled into a mobile application.

Regulatory Skill Mapping and Feedback

We invite readers to register with CER's **Regulatory Skill Mapping (RSM)** initiative. This would help us design CER's activities and deliver a more relevant output by engaging with stakeholders. We also request your inputs on the newsletter as well as on the activities of the Centre.

CER in Media

- ❖ IIT-K sets up country's first Centre for Energy Regulation (HT, 21st May, 2018)
- ❖ CER at IIT-K to boost power sector in institutes (TOI, 21st May, 2018)

- ❖ Power regulators should shift to a new track, says secretary (FE, 23rd May, 2018)
- ❖ आईआईटी में बना देश का पहला सेंटर फॉर एनर्जी रेगुलेशन (अमर उजाला, 21st May, 2018)

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