Determination of levellised generic tariff for FY 2021-22 under Regulation 8 of the CERC (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020 [Proposal]

CERC has notified a proposal for determination of levellised generic tariff for FY 2021-22 on 18th February, 2021.

Key facets of this proposal are given below:

Objective: Procedure to determine the levellised generic tariff for small hydro projects (SHP), biomass power projects with Rankine cycle technology, non-fossil fuel-based co-generation projects, biomass gasifier-based power projects and biogas-based power projects for FY 2021-22.

Control Period: RE Tariff regulations specify that the Control Period for determination of tariff for renewable energy projects (RE projects) shall be from 01st July, 2020 to 31st March, 2023. These regulations specify that the tariff determined for the RE projects commissioned during the control period, shall remain valid for the tariff period (useful life of the project). The commission will determine such generic tariff through a generic tariff order at least one month before the commencement of year for each year of the control period. (Clause 4)

Applicability: The tariff determined will be applicable from the second year of the control period, which shall be applicable for the projects commissioned during the period from 1st April, 2021 till 31st March, 2022. (Clause 4)

Tariff Structure: As per RE Tariff regulations, the tariff shall be determined by the components like Return on Equity (RoE), Interest on loan capital (IoL), Depreciation, Interest on working capital (IoWC), Operation and Maintenance expenses.

Discount Factor: The discount factor considered the normative debt equity ratio (70:30) and weighted average of the post-tax rates for debt and equity component. (Clause 10)

Interest Rate will be considered for the loan component (i.e., 70% of capital cost) is 9%. For equity component (i.e., 30% of capital cost), the rate of RoE is considered at post-tax rate of 14%. Further, corporate tax rate has been considered as 34.94%. Accordingly, the discount factor (DF) derived by this method for all technologies is 8.30% (as given equation (1)). (Clause 11)

$$\text{Discount Factor} = [\{(9\% \times 0.70) \times (1 - 34.94\%)\} + (14.0\% \times 0.30)] = 8.30\% \quad \textbf{(1)}$$

Return on Equity: The rate of RoE is calculated by considering MAT and corporate tax rate as 17.47% and 34.94%, respectively. The rate of return for first 20 years and after 20 years of useful life has been computed as 16.96% and 21.52%, respectively. (Clause 25)

Interest on Loan: In order to evaluate the tariff, the normative interest rate of 200 basis points (BP) above the average State Bank of India Marginal Cost of Funds based Lending Rate (MCLR) (one-year tenure) prevalent during the last six months. Interest rate for loan component is ascertained as 9%. (Clause 27)

Interest on Working Capital: It is estimated as the normative interest rate of 350 BP above the average SBI MCLR (one-year tenure) which is available during the last six months (equivalent to interest rate of 10.50%) (Clause 31(3))

Subsidy or Incentive: In case Projects avails any subsidy, grant or incentives by state/central government including accelerated depreciation benefit, then the corporate tax will be applicable at the rate of 34.94%. In order to compute the net depreciation benefits, depreciation will applicable at the rate of 5.28%. (clause 55)

Technology Specific Parameters:

Projects	Useful Life (Yrs.)	Project Size (MW)	States/UTs	Capital Cost (₹L/MW)	Rate of Depreciation (%)		CUF / PLF (%)	O&M (₹L/MW) Esn. @3.84% p.a		Aux (%)	SHR (kCal/kWh)	CV (kCal/kg)
					up to 15 years	16th year on ward		FY 20-21	FY 21-22			
SHP	40	< 5	HP, UK, WB, J&K, Ladakh, NE	1100	4.67	0.8	45	41.78	43.38	1	-	-
			Others	780	4.67	0.8	30	33.66	34.95	1	-	-
		5 - 25	HP, UK, WB, J&K, Ladakh, NE	1100	4.67	0.8	45	31.34	32.54	1	-	-
			Others	900	4.67	0.8	30	24.37	25.31	1	-	-
Biomass (Rankine)	25	-	All India	Other than RSJ-WCC – 559 Other than RSJ-ACC – 600 RSJ-WCC-611 RSJ-ACC-652	4.67	2	80	46.42	48.20	WCC – 10 ACC - 12	4200 (Trav.Grate) 4125 (AFBC)	3100
Co-generation (Non-fossil fuel)	25	-	UP & AP	492	4.67	2	45	24.52	25.46	8.5	3600	2250
		-	TN & MH	492	4.67	2	60	24.52	25.46	8.5	3600	2250
		-	Others	492	4.67	2	53	24.52	25.46	8.5	3600	2250
Biomass (Gasifier)	25	-	All India	443	4.67	2	85	61.31	63.66	10	-	-
Biogas	25	-	All India	886	4.67	2	90	61.31	63.66	12	-	-

Note: RSJ- Rice straw and Juliflora (plantation) based project; WCC - Water cooled condenser; ACC - Air cooled condenser

The Regulation can be accessed **here** .

CER Opinion –

- **Swiss Challenge for all Cases Involving Project-Specific Tariff:** As per current scenario the energy market is mature enough. The solar as well as wind technologies have witnessed a significant competition. The relative success of competitive technologies further encourages the competitiveness in the sector, CERC should leave it to the market forces.

  The renewable energy (RE) sector particularly solar and wind energy has witnessed matured in assimilating the comparative spirit. The regulatory framework for development of these mature RE technology should now be largely based on the competitive discovery of tariff. In case, there are very special circumstances which may entail project-specific tariff, the Commission may like to introduce the Swiss Challenge approach post determination of tariff. Such projects, once offered for competitive bidding under Swiss Challenge approach, would help bring further cost reduction for procurement of power through such projects. CERC may like to issue separate regulation for the same, or introduce enabling provision in the proposed RE Tariff regulation.
- **Rate of Interest for Estimation of Discount Factor:** It is suggested that the interest rate considered for estimation of discount factor should be linked to a benchmark interest rate. This will allow for automatic revision of the interest rate of the subsequent years.

  In line with the CERC terms and condition for Tariff determination from Renewable Energy Sources Regulations, 2020, the rate of interest may be set at rate of interest of SBI MCLR plus two hundred (200) basis points, which currently translates to the same rate however, a clear enunciation of the underlined principle for deriving the interest rate will reduce regulatory uncertainty.
- **Tax Rate:** The specified corporate tax rate @34.94% is the maximum applicable tax rate for an Indian corporate. However, in the light of the recent income tax amendments in the recent budget, the actual tax paid may be significantly lower, specifically for small size companies. Furthermore, the available revenues for reducing tax burden leads to a significantly lower effective tax rate for the corporate entities. Thus, the calculated discount factor would provide the uppermost estimation for the same.
- **Capital Cost:** The prevailing approach to specify capital cost for individual RE technology does not provide sufficient incentive for cost reduction, improvement in technology and construction management practices. Furthermore, a part of capital cost is influenced by the prevailing interest rate which influences not only the interest during construction but also influence other cost components constituting overall capital cost. The components of capital cost are given below:
  a) Cost of land
  b) Including plant & machinery
  c) Civil work, erection and commissioning
  d) Financing cost and interest during construction
  e) Evacuation infrastructure

  The significant difference of the competitive RE tariff and those determined in the tariff regulation highlight overestimation of the capital cost for the purpose of determination of RE tariff under these regulations. While the RE technologies covered under these regulations has not yet attained sufficient maturity as witnessed in case of solar and wind energy. The regulatory approach in setting capital cost benchmark for the identified RE technologies should provide necessary signals to the investors, technology developers, EPC contractors, manufacturers, vendors as well as lenders to bring about reduction in capital cost through innovation, efficient operational practices. This can be

achieved by introducing progressive efficiency factor (X) across different components of capital cost. The RPI minus X approach can be adopted suitably to provide trajectory of benchmark capital cost of these technologies under these regulations. CERC should take initiative to set lower base benchmark on the basis of different cost components. Further, WPI of these factors minus X factor should be considered for evaluation. However, it is necessary to revisit the existing benchmark otherwise the capital cost for subsequent years may be inflated.

It may be difficult to ascertain market trend for different technologies, which are not widely traded and there is limited information available in the public domain. Further, the limited information is available only through the technology suppliers, thus leaving a moral hazard situation amidst the information asymmetry. Capital Cost should be ascertained on the basis of competitive bidding for capital procurements across the country. States regulatory commissions may also adopt the similar approach for RE projects. In absence of information capital cost for setting these tariff continue to prevail across country. Given that there is significance of capital cost benchmarking which is useful for CERC and SERC. It is suggested central electricity authority may initiate an exercise for same. CERC may undertake necessary studies to enable setting up benchmarks capital cost for RE projects. (under Section 73 (i) of the Electricity Act, 2003)