

Explanatory Memorandum

For

Draft Rates, Charges and Terms and Conditions

For

For usage of Intervening Transmission Facilities

September 2009

CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

Regulations under Section 36 of the Electricity Act of 2003

1.0 Background

- 1.1 Section 35 of the Electricity Act, 2003 provides for usage of intervening transmission facilities.

“35. Intervening transmission facilities.- The Appropriate Commission may, on an application by any licensee, by order require any other licensee owning or operating intervening transmission facilities to provide the use of such facilities to the extent of surplus capacity available with such licensee:

Provided that any dispute regarding the extent of surplus capacity available with the licensee, shall be adjudicated upon by the Appropriate Commission.”

Section 36 provides for charges for using intervening transmission facilities.

“36. Charges for intervening transmission facilities.- (1) Every licensee shall, on an order made under section 35, provide his intervening transmission facilities at rates, charges and terms and conditions as may be mutually agreed upon:

Provided that the Appropriate Commission may specify rates, charges and terms and conditions if these cannot be mutually agreed upon by the licensees.

(2) The rates, charges and terms and conditions referred to in sub-section (1) shall be fair and reasonable, and may be allocated in proportion to the use of such facilities.

Explanation.- For the purposes of section 35 and 36, the expression “intervening transmission facilities” means the electric lines owned or operated by a licensee where such electric lines can be utilised for transmitting electricity for and on behalf of another licensee at his request and on payment of a tariff or charge.”

- 1.2 The Central Commission is the appropriate Commission for inter-State transmission system and as per section 2 (36) of the Electricity Act, 2003, “inter-State transmission system” includes “the conveyance of electricity across the territory of an intervening State as well as conveyance within the State which is incidental to such inter-State transmission of electricity”.
- 1.3 Section 36 confers jurisdiction on the Appropriate Commission to specify rates, charges and terms and conditions on the event these cannot be mutually agreed upon by the licensees.

Regulations under Section 36 of the Electricity Act of 2003

- 1.4 Section 36 requires the framing of regulations to provide for rates and charges and terms and conditions for use intervening transmission facilities. It also requires that the rates, charges and terms and conditions should be fair and reasonable, and may be allocated in proportion to the use of such facilities.
- 1.5 The Central Electricity Regulatory Commission is competent to make these Regulations under Section 36 of the Electricity Act of 2003 virtue of the powers vested on it vide Section 178(2)(i) of the said Act.

“178. Powers of the Central Commission to make regulations.-

(1) The Central Commission may by notification make regulations consistent with this Act and the rules generally to carry out the provisions of this Act.

(2) In particular and without prejudice to the generality of the power contained in sub-section (1), such regulations may provide for all or any of the following matters, namely:-

...

(i) rates, charges and terms and conditions in respect of intervening transmission facilities under proviso to section 36;”

- 1.6 Accordingly the draft regulation on the rates, charges and terms and conditions for usage of intervening transmission facilities under Section 36 read with Section 178(2)(i) came to be prepared.

2.0 Title

- 2.1 These regulations may be called the Central Electricity Regulatory Commission (Rates, Charges and Terms and Conditions for usage of Intervening Transmission Facilities) Regulations, 2009.

3.0 Scope and Applicability

- 3.1 These regulations shall apply only to usage of all such intervening transmission facilities which are incidental to inter-State transmission as the Central Commission exercises jurisdiction only in cases of inter-State transmission and intra-State transmission falls outside its purview.
- 3.2 As per the explanation provided under Section 36 of the Act these regulations shall apply to usage by one or more licensees, of the intervening transmission facilities owned or operated by another licensee.
- 3.3 The ‘rates and charges’ specified in this regulation shall apply in case the two contracting parties have failed to mutually agree on the rates and charges for the usage of transmission facilities.

Regulations under Section 36 of the Electricity Act of 2003

3.4 The 'terms and conditions' contained in these regulations shall be the model / standard terms and conditions.

4.0 Rates and Charges

4.1 The rates and charges to be specified under these regulations are proposed as Rs. Megawatt (MW) / day. The rates and charges for use of intervening transmission facilities as specified under Schedule 1 of these regulations is based on megawatt - mile method.

4.2 The rates and charges as specified under these regulations are applicable for short-term, medium term and long term usage of intervening transmission facilities.

4.3 The rates and charges have been computed based on cost plus approach and after levelising the costs over the useful life. In the subsequent paras, we give an analysis of Capital Cost taken as the basis and rationale for levelized approach and various assumptions for the purposes of levelisation.

Analysis of Capital Cost for Transmission Line

4.4 400 KV D/C and S/C transmission lines :

Capital Cost for 400 KV D/C and 400 KV S/C transmission lines are based on the ongoing study of CERC on Capital Cost benchmarking for Transmission lines. Assumptions considered in this analysis are summarized below :

Year of procurement	: FY 2006-07
Insulator Type	: Standard
Conductor Type	: ACSR Twin moose
Type of Terrain	: Plain

After considering the above mentioned inputs , an excel programme prepared for the benchmarking study was run and the norms for capital costs were derived. Norms Derived from the above Study are :

Regulations under Section 36 of the Electricity Act of 2003

Transmission System	Capital Cost (Rs. Lakh)
400 KV D/C	72.53
400 KV S/C	40.10

4.5 For 200 KV and 132 KV D/C and S/C Transmission System

To derive norms for these systems the available CERC orders for corresponding systems have been analyzed. Considering the limited number of orders and the actual cost of transmission system on the date of commercialization of operation (DOCO), the cost is escalated or discounted to get the corresponding values of capital cost in financial year 2006-07. The escalation factor used for this purpose is from the CERC notification dated 3rd July 2009 on Guidelines for Determination of Tariff by Bidding Process for Procurement of Power by Distribution Licensees. Also the discount factor is used from the CERC notification dated 27th march 2009 on Guidelines for Determination of Tariff by Bidding Process for Procurement of Power by Distribution Licensees. From these assumptions the cost derived for the systems are as follows:

Transmission system	No. of petitions	Derived Capital for 2006 - 07
200 KV D/C	3	49.89
200 KV S/C	2	29.8
132 KV D/C	3	26.34
132 KV S/C	3	24.47

Levelisation of Tariff

- 4.6 The rates and charges represent levelized tariff of the transmission system at various voltage levels (132 kV, 222 kV, 400kV) for 35 years. The tariff has been levelized taking into consideration tariff of the transmission system at various voltage levels for a period of 35 years as it is the average useful life of a transmission utility.
- 4.7 Given the fact that intervening transmission facilities at the State level could be of different vintage, levelization has been resorted to neutralize the effects of current cost on the one hand and the fact that major part of the cost could have been recovered by the transmission systems which would have been in existence for varying periods of time.

Regulations under Section 36 of the Electricity Act of 2003

- 4.8 The cost of sub-station has been assumed as 10% of the cost of transmission line while calculating the levelized tariff of the transmission system at various voltage levels. This is considered sufficient to include the cost of bay and share the cost of Auxiliaries etc. The transformer cost has not been included as it cannot be attributed to transaction through a specific intervening transmission facility. The capacity of transformer used in a location is as per load requirement in that area and another line can be added without altering transformer. It may be noted that the objective being to arrive at normative rates and charges, some rational assumption has to be made. Further, it is not possible to identify location of each intervening transmission facility, number of transformer and number of incoming and outgoing lines and their operating load in each line and then proportionately assign cost of transformer to each line. In earlier cases of GRIDCO and Western Region DNH only the cost of bay was used for computation of wheeling charges.
- 4.9 The various assumptions used for the purpose of arriving at the levelized tariff are provided in **Annexure-I** to this Explanatory Memorandum.

5.0 Terms and Conditions

- 5.1 The terms and conditions contained in Chapter 3 of this Regulation provide a model/ standard framework of terms and conditions and cover
- Notice/submission of request,
 - Consent by the licensee owning or operating the intervening transmission facilities,
 - Scheduling,
 - Payment security,
 - Default in payment,
 - Energy Accounting and settlement of deviation,
 - Reactive energy loss, and
 - Transmission loss.

Regulations under Section 36 of the Electricity Act of 2003

ANNEXURE -1

Assumptions for calculation of levelised tariff for transmission systems are listed below :

S. No.	Particular	Unit	Description
	<u>Financial Assumptions</u>		
1.	Debt: Equity		70:30
2.	Interest Rate	%	Average SBI Long term PLR = 12.83%
	Return on Equity		
3.	For first 10 years	%	19%
	11 th year onwards	%	23%
	Depreciation		
4.	For first 12 years	%	5.28%
	For subsequent years	%	Spread across the remaining useful life
5.	Interest on Working Capital	%	SBI PLR
6.	Working Capital		
i.	O&M charges	Month of O & M Expenses	1
ii.	Maintenance Spare	% of O & M Expenses	15%
iii.	Receivables for Debtors	Months of fixed cost	2
7.	O & M Norms		
i	O&M escalation factor	%	5.72%
	Technical Assumptions		
8.	Length of Transmission lines	KM	50
9.	Load Factor	%	80
10.	Life of the asset	Years	35
11.	Additional Cost of Substation	% of capital cost	10%