

**Procedure for
Obtaining data by Implementing Agency for Determination of PoC
Transmission Charges and Losses**

In compliance of

**Central Electricity Regulatory Commission
(Sharing of inter-State Transmission Charges and Losses)
Regulations, 2010**

June, 2011

**The Implementing Agency
(National Load Despatch Centre)**

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Formats for submission of data to Implementing Agency:

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Format-II: Existing Network data for load flow

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1.0 Outline

- 1.1. This Procedure is made in compliance of Regulation 7 (1) (f), 15 (1) (a) and 18 (2) of the Central Electricity Regulatory Commission (Sharing of Inter State Transmission Charges and Losses) Regulations, 2010, herein after called “the Sharing Regulations” and Orders dated 4.4.2011, 22.6.2011 and 29.6.2011 issued by the Commission under “Removal of Difficulties”.
- 1.2. This procedure provides modalities for the collection of data by the Implementing Agency (IA) for sharing of inter-State transmission charges and losses based on Point of Connection method as specified in the Sharing Regulations.

2.0 The Implementing Agency

- 2.1. Regulation 18(1) of the Sharing Regulations provides as stated below;

Based on the Yearly Transmission Charge, the allocation of the ISTS Charges and Losses shall be allocated by an entity authorised by the Commission for the purpose and shall be designated as the Implementing Agency.

Provided that for the first two years of the notification of these regulations the NLDC shall be the Implementing Agency.

3.0 Procedure for Obtaining data by Implementing Agency

- 3.1. As per Regulation 18 (2) of the Sharing Regulations, the Implementing Agency (IA) shall submit for the approval of the Commission, a detailed procedure along with data formats for obtaining data from Designated ISTS Customers (DICs), ISTS Licensees and non-ISTS Licensees whose assets have been certified by RPCs as being used for inter-State transmission, within 30 days of notification of these regulations, for Implementation of the Point of Connection (PoC) method.

4.0 Relevant definitions from the Regulations

- 4.1 **Designated ISTS Customers (DIC's)** means the users of any segments/ elements of the ISTS and shall include all generators, state transmission utilities, SEBs or load serving entities directly connected to the ISTS including Bulk Consumer and any other entity/ person;
- 4.2 **Deemed Inter State Transmission System (Deemed ISTS)** means such transmission system which has regulatory approval of the Commission as being used for inter-State transmission of power and qualified as ISTS for the purpose of these Regulations unless otherwise specified;
- 4.3 **Basic Network** means the power system of the country at voltage levels 132 kV and above and 110 kV where generators are connected, HVDC transmission network and all Generator and loads connected to it;
- 4.4 **Node** means a sub-station or a switchyard of a generator;

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4.5 **Point of Connection (PoC) transmission charges** are the nodal/ zonal charges determined using the Point of Connection charging method.

5.0 Guidelines and modalities for submission of data to the IA

5.1 All DICs, ISTS licensees, Deemed ISTS Licensees, owners of RPC certified non-ISTS lines, shall submit the following data to the Implementing Agency in the prescribed formats enclosed with this procedure:

5.1.1 Basic Network data along with the network connectivity diagram (an updated geographical power map).

5.1.2 Details of long term access and medium term open access.

5.1.3 CTU shall provide the details of Long-term Access (LTA) and medium term open access (MTOA) approved for the next year, including the date from which the LTA has been approved.

5.1.4 DICs shall submit Additional Medium Term Withdrawal/ Injection to the Implementing Agency by 10th day of every month for the applications approved in last month as per the "Procedure for obtaining data by Implementing Agency for determination of PoC transmission charges and losses". The IA shall review the figure in consultation with RLDCs and CTU, if required.

5.1.5 The list of lines which forms a part of the ISTS Network for the next application period shall be furnished by the first week of October by the owners of the following lines:

(i) ISTS Lines

(ii) Deemed ISTS Lines (Approved by CERC)

(iii) Non-ISTS Lines, certified by RPCs as being used as ISTS

5.1.6 Total injection and withdrawal (MW and MVar) data at all the ISTS nodes.

5.1.7 The respective owners of lines shall provide the list of lines to be considered for the sharing mechanism by the end of 1st Week of October for the next financial year. In case of Deemed ISTS and Certified non-ISTS lines, the owners shall also submit a copy of approval/ certificate obtained from the designated authority as the case may be.

5.1.8 RPCs shall send the list of certified non-ISTS lines of their respective region to the Implementing Agency by the first week of October in each financial year.

5.1.9 The line wise YTC of the entire ISTS network along with the breakup of sub-station cost shall be provided by the inter-State Transmission Licensees, Deemed ISTS Licensees and Non-ISTS Licensees whose assets have been certified by RPCs as being used for inter-State transmission . The YTC of the substations shall be apportioned to the lines whose cost is to be shared under the hybrid mechanism.

5.1.10 In case the sub-station and lines belong to different transmission licensees, and if the substation cost is to be recovered, such cost shall be apportioned only to those lines whose cost is to be recovered through hybrid mechanism.

5.1.11 In the subsequent years, inter-State transmission licensees, deemed ISTS Licensees and Non-ISTS Licensees whose assets have been certified by RPCs as being used for inter-State transmission shall submit data and dates of commissioning of any new transmission asset in the next financial year and their YTC or ARR as the case may be,

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as approved by Appropriate Commissions/ provisional YTC approved by the Commission by the first week of October.

- 5.1.12 Yearly Transmission Charge (YTC) to be recovered for inter-State Transmission/ deemed inter-State Transmission lines/ non-ISTS Licensees whose assets have been certified by RPCs as being used for inter-State transmission along with details such as length, conductor type and configuration, rated voltage level and operating voltage level of the transmission line.
- 5.1.13 In the first year of implementation, the entire network data at 132 kV and above except where generators are connected at 110 kV shall be submitted. In the subsequent years, the information regarding change or augmentation in the network shall be submitted along with date of commissioning. The Yearly Transmission Charges (YTC) of the new transmission elements, whose charges are to be recovered for which petitions for approval of Transmission Tariff have been filed in the appropriate Commission and for which final or provisional tariff have been given by the Commission, shall also be submitted by the respective inter-State/ deemed inter-State transmission licensees/ non-ISTS Licensees whose assets have been certified by RPCs.
- 5.2 The Basic Network shall comprise of the entire electricity system, electrical plants and/ or transmission lines at voltage levels 132 kV and above and all the generators connected upto 110 kV level. In the States where voltage level next to 220 kV/ 230 kV system is 110 kV, data of entire network upto 110 kV level is to be furnished. Power flow into a lower voltage system from the voltage levels indicated in the definition of the Basic Network shall be considered as load at that sub-station. Power flow from a lower voltage system into the electricity systems at the voltage levels indicated in the definition of the Basic Network shall be considered as generation at that sub-station. However there are certain DICs, like Chandigarh, which is connected only at 66 kV level. In order to represent these States/ Union Territories (UTs) in the basic network, network data upto such level shall be furnished by those DICs.
- 5.3 There may be cases for which assets owned by transmission licensees, deemed ISTS licensees and non-ISTS Licensees whose assets have been certified by RPCs, do not have separate line wise and sub-station wise approved tariff. For smooth implementation of the PoC method in such cases the following method shall be followed in the initial few years or till such time as specified by the Commission:
- 5.3.1 The CTU shall submit indicative costs for different voltage level and conductor configuration based on the historical data. The transmission licensee shall give its total YTC of lines whose charges are to be recovered through PoC charge mechanism for the forthcoming year under consideration along with circuit km at each voltage level and conductor configuration as per **Format-IV**. Total YTC circuit km of each voltage level and conductor type and configuration and indicative costs furnished by CTU shall be used to arrive at the per circuit km YTC of each voltage level and conductor type and configuration.
- 5.3.2 In case where YTCs of non-ISTS Licensees whose assets have been certified by RPC and deemed ISTS lines are not available as approved by the Appropriate Commission, the average YTC per circuit km of ISTS lines computed for relevant voltage level and conductor type and configuration shall be used for computing the charges. All the transmission lines which have been already been approved by the respective RPCs at the time of notification of the Regulations,, shall only be considered for the purpose of

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sharing charges through PoC method in the first year of implementation. Sharing of charges of any new non-ISTS lines certified by the RPCs to be considered under the PoC method shall be as per the procedure approved by the Commission in due course of time.

6.0 Timeline for submission of data

6.1 **Submission of data in first year of implementation of the Sharing Regulations:** In the first year of the implementation of these regulations, all the DICs, inter-State Transmission Licensees, Deemed ISTS Licensees and non-ISTS Licensees whose assets have been certified by RPCs shall submit the Injection/ Demand data, network data and YTC data to the IA not later than 60 days of the notification of the regulations as per Format - I, II, III and IV of this procedure.

6.2 For subsequent years:

6.2.1 Basic Network Data: by 1st fortnight of September.

6.2.2 Yearly Transmission Charge to be submitted: On or before the end of the fourth week of November in each financial year.

6.2.3 Nodal injection and Demand Data: On or before the end of the fourth week of November in each financial year.

7.0 Formats for Data submission to the Implementing Agency

7.1 **Formats for data submission:** The formats for data submission are described below:

7.1.1 **Format - I: Commercial data containing Line-wise YTC:** This format is to be filled by

- (a) ISTS licensees
- (b) Owners of deemed ISTS
- (c) Non-ISTS licensees whose assets have been certified by RPCs for being used as inter-State transmission system

Format - I consists of the following three parts:

Format I-A: Line wise YTC

Format I-B: Date of commercial operation and Conductor type and configuration and voltage level

Format I-C: Apportionment of sub-station YTC on lines

7.1.2 **Format - II: Existing Network data for load flow (for the first year and in subsequent years for the modification in the networks due to additions, Loop In Loop Outs, terminations etc. during the respective year):** This format is to be filled by

- (a) ISTS licensees
- (b) Owners of deemed ISTS
- (c) Non-ISTS licensees with assets certified by RPCs as being used for inter State transmission
- (d) State transmission utilities, SEBs or load serving entities

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(e) Generators which are Regional entities

Format – II consists of the following six parts:

Format II-A: Bus data

Format II-B: Generator data

Format II-C: AC line data

Format II-D: Transformer/ ICT data

Format II-E: HVDC line data

Format II-F: Switched shunt data

All the columns in the formats are to be filled in ‘per unit’ values at the 100 MVA base and concerned base voltage without leaving any blanks.

7.1.3 **Format - III: Long term/ Medium term Contracts and forecasted injection/ demand data:** This format is to be filled by all the DICs.

Format - III consists of the following two parts:

Format III-A: Details of long term and medium term contracts

Format III-B: Forecasted Nodal generation and Nodal demand data for average representative scenario for the purpose of preparation of representative base cases.

7.1.4 **Format - IV:** Ratio of indicative costs for different voltage level and conductor type and configuration. This format is to be filled by CTU.

The formats for the data submission and ‘Help file’ describing the contents of various columns may be downloaded from the website of the Implementing Agency at <http://www.nldc.in/IA-formats.aspx>

7.2 **Mode of data submission**

The data in Microsoft excel sheets shall be e-mailed to the Implementing Agency. The e-mail address is: implementingagency@powergridindia.com. The mail shall be backed-up by a written communication confirming submission of data by e-mail to IA.

In addition to the above, DICs may submit the filled-up formats in a CD to Implementing Agency.

Instructions for filling Format – I

1. Format-I is for commercial data containing line wise Yearly Transmission Charge (YTC). This is to be filled up by ISTS licensee and owners of deemed ISTS.
2. Only sky coloured cells are to be filled-up.
3. Section 5 (vi) of the procedures may be referred for apportionment of YTC of the substations to the lines emanating from the substation (filling up sheet TYC Details).
4. In YTC Details sheet, while filling up status of YTC; either A (Approved) or B (Benchmarked) or P(Provisional) or C (competitive bidding based) should be written depending on the position.
5. Section 5(vi) and (vii) of the procedures should be followed while filling-up the two sheets YTC Details and YTC Summary.
6. Date of Commercial Operation for only those lines which are expected to get commissioned in next application period.

Commercial data containing line-wise, network element-wise YTC

Name of the Transmission Licensee/ Owners of Deemed ISTS Licensees/ Owners of Non-ISTS lines certified by RPCs	
Address:	
Contact Person	
Contact Number	

Voltage Level (kV)	Conductor Type	No. of sub - conductors	Line length (Ckt km)	Total Cost (₹ Lakh per annum)	Average Cost (₹ Lakh per km per annum)
765					
400					
220					
132					
66*					

* 66 kV if it is part of the ISTS, like Chandigarh, etc.

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Instructions for filling-up the Format – II

1. Format-II is for network data. ISTS Licensees, owners of deemed ISTS transmission systems and DICs whose assets are being considered in the Basic Network shall supply the network data.
2. There are six data sheets, Format-I(A) to Format-I(F) to be filled-up containing Bus Data, Generator Data, AC Line Data, Transformer Data, DC Line Data, Switch Shunt Data and one sheet with Agency details who submits data.
3. Only sky coloured cells are to be filled-up.
4. Section 2.1.2 of Attachment-I to Transmission Regulation may be referred for filling up Network data.
5. Section 5.1, 5.2 and 5.3 of the procedures may also be referred for filling up the formats.
6. Date of Commercial Operation for only those lines which are expected to get commissioned in next application period.

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Submission of network data for load flow study

Details of ISTS licensee/ owner of deemed ISTS/ DIC whose assets are included in basic network

Name of the data submitting Agency	
Whether ISTS licensee/deemed ISTS owner/DIC	
Address	
Contact Person	
Contact Number	

**Network data for Load Flow Studies
Information to be submitted by ISTS licensee/deemed ISTS owner/ DIC**

Date of Commercial Operation	Bus Name	Machine Identifier (ID)	MW Output (PG)	Max MW (PT)	Min MW (PB)	MVAR Output (QG)	Max MVAR (QT)	Min MVAR (QB)	Voltage Set point (VS)	Remote Controlled Bus Index (IREG)	MVA Base (MBASE)	Machine Impedance (pu on MBASE)		Step up Transformer Impedance (pu on MBASE)		Off Nominal Tap Ratio	RMPCT
												Resistance (ZR)	Reactance (ZX)	Resistance (RT)	Reactance (XT)		

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FORMAT – II (C)

Network data for Load Flow Studies Information to be submitted by ISTS licensee/ deemed ISTS owner/ DIC

Date of Commercial Operation	From Bus Name	To Bus Name	Ckt ID	Length	From Bus		To Bus		Rate A	Rate B	Rate C	Resistance (R)	Reactance (X)	Susceptance (B)
					Conductance	Susceptance	Conductance	Susceptance						

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FORMAT – II (D)

Network data for Load Flow Studies Information to be submitted by ISTS licensees/deemed ISTS owners/ DICs

Date of Commercial Operation	From Bus Name	To Bus Name	Ckt ID	Rate A	Rate B	Rate C	Nominal Tap Ratio	Transformer Phase shift angle	Resistance (R)	Reactance (X)	Controlled Bus	Max. Turns Ratio	Min. Turns Ratio	Max Controlled Volts	Min Controlled Volts	Turns Ration Step Increment	Table

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FORMAT – II (F)

Network data for Load Flow Studies Information to be submitted by ISTS licensee/deemed ISTS owner/ DIC

Date of Commercial Operation	Bus Name	Mode	Voltage Upper Limit	Voltage Lower Limit	Voltage Set point	N1	B1	N2	B2

N: Steps for Block N
B: Admittance Increment of Block 1 in MVAR at 1.0 pu

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Instructions for filling-up Format-III

FORMAT-III (A)

Format-III (A) is to be filled up by DICs with details of Long Term and Medium term contracts.

Only green coloured cells are to be filled-up.

Withdrawal & injection contracts are to be specified seperately against each point.

Period of Approval in the format means period of the year.

Time duration in the format means time of the day of the specific contracts.

FORMAT-III (B)

Format-III (B) is to be filled up by DICs with withdrawal / injection data.

Only green coloured cells are to be filled-up.

Withdrawal & injection figure of each node upto 132 KV level are to be entered. Implementing Agency will specify the nodes / group of nodes on which DICs would submit the forecasted injection/withdrawal. This would be available in the website of implementing agency.

In case of injection / withdrawal in a particular node, both data are to be entered against the said node.

Data is to be entered for the stipulated blocks for January 2011- March 2011 and April 2011-March2012

Section 6.3(c) of the procedures may be referred for filling up Format-III (B)

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FORMAT – III (A)

Details of Long Term Access and Medium Term Open Access Contracts Information to be submitted by DICs

Name of the DIC:	
Address:	
Contact Person:	
Contact Number:	
E-Mail ID:	

Approval/ Reference Number	Point of Injection	Point of Drawal	Approved Quantum (MW)	Period of Approval (Date)		Time Duration (Hour)	
				From	To	From	To

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FORMAT-III (B)

For PoC Charge Determination Forecast Injection / Withdrawal data at all nodes upto 132 kV Information to be submitted by
DICs

Name of the DIC: Address: Contact Person: Contact Number: E-Mail ID:												

YEAR	
Season-I (April to June)	Data of 15th May (next working day if 15th May is holiday)

Date:

Sl. No.	Name of Node	Voltage level	Peak Withdrawal		Peak Injection			Off-Peak Withdrawal		Off-Peak Injection		
			MW	MVAr	MW	MVAr (Max)	MVAr (Min)	MW	MVAr	MW	MVAr (Max)	MVAr (Min)
Total												

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Season-II (July to Sept)	Data of 15th May (next working day if 15th. May is holiday)
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Date :

Sl. No.	Name of Node	Voltage level	Peak Withdrawal		Peak Injection			Off-Peak Withdrawal		Off-Peak Injection		
			MW	MVAr	MW	MVAr (Max)	MVAr (Min)	MW	MVAr	MW	MVAr (Max)	MVAr (Min)
Total												

Season-III (Oct to Nov)	Data of 30th October (next working day if 30th October is holiday)
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Date :

Sl. No.	Name of Node	Voltage level	Peak Withdrawal		Peak Injection			Off-Peak Withdrawal		Off-Peak Injection		
			MW	MVAr	MW	MVAr (Max)	MVAr (Min)	MW	MVAr	MW	MVAr (Max)	MVAr (Min)
Total												

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Season-IV (Dec to Feb) **Data of 15th January (next working day if 15th January is holiday)**

Date :

Sl. No.	Name of Node	Voltage level	Peak Withdrawal		Peak Injection			Off-Peak Withdrawal		Off-Peak Injection		
			MW	MVAr	MW	MVAr (Max)	MVAr (Min)	MW	MVAr	MW	MVAr (Max)	MVAr (Min)
Total												

Season-V (March) **Data of 15th March (next working day if 15th March is holiday)**

Date :

Sl. No.	Name of Node	Voltage level	Peak Withdrawal		Peak Injection			Other than Peak Withdrawal		Other than Peak Injection		
			MW	MVAr	MW	MVAr (Max)	MVAr (Min)	MW	MVAr	MW	MVAr (Max)	MVAr (Min)
		(kV)										
Total												

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FORMAT- IV

Line Type	Cost (Lakhs/km)	Ratio
765 kV D/C		
765 kV S/C		
400 kV D/C		
400 kV D/C (Quad) Moose		
400 kV D/C (Quad) Bermisis		
400 kV D/C (triple) Snow bird		
400 kV D/C (twin) Moose		
400 kV D/C (twin) Bermisis		
400 kV S/C		
220 kV D/C		
220 kV S/C		
132 kV D/C		
132 kV S/C		