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# South Asia Regional Initiative for Energy Integration (SARI/EI) Regulatory and Policy Frameworks for deeper Energy/Electricity Integration, advancing Cross Border Energy Trade in South Asia



**Mr. Pankaj Batra, Project Director and Rajiv Ratna Panda, Technical Head,  
SARI/EI/IRADE**

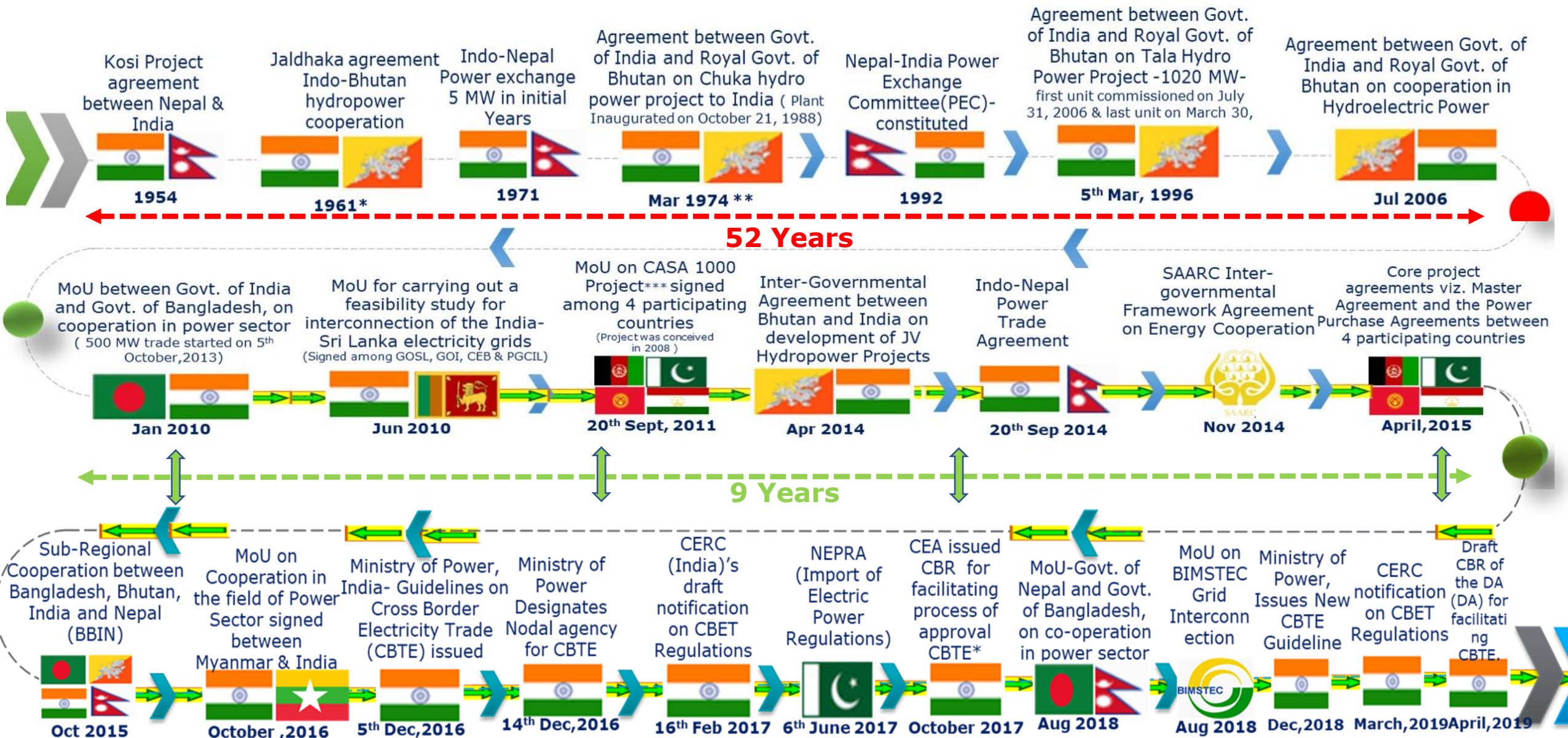
**Conference on “Regional Energy Integration and Cross Border Energy Trade: A New  
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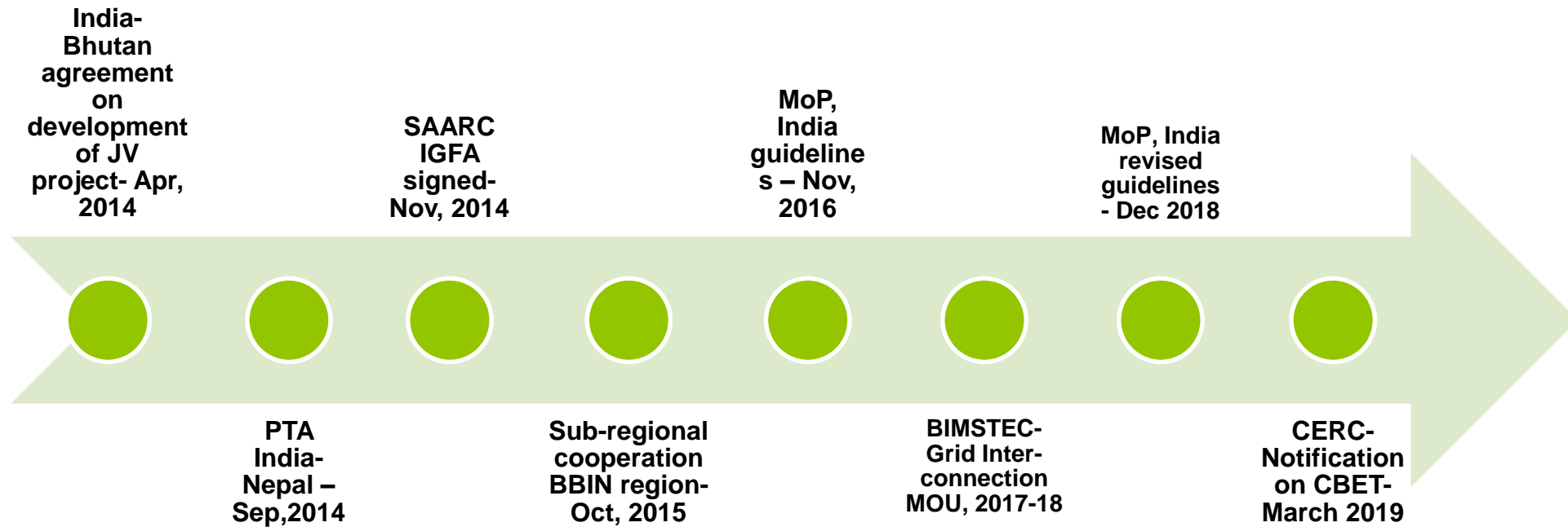
## Outline

- ❑ Evolution and Existing Policy and Regulatory Framework CBET.
- ❑ Key Policy ,Regulatory Challenges & Risks for CBET.
- ❑ GoI guidelines for import/ export (cross border) of electricity- 2018
  - Key features
- ❑ Central Electricity Regulatory Commission (Cross Border Trade of Electricity) Regulations, 2019
  - Definitions , Designated Authority
  - Transmission Planning , Planning and Settlement Nodal Agency
  - Responsible Authority for transmission access and System Operation
  - Trading on Power Exchange
  - Open accesses and Connectivity
  - Technical Compliances
  - System Security, event information
  - Available Transfer Capability, Scheduling and Energy Accounting

# Evolution of Energy Cooperation, CBET- Key Policy & Regulatory Development



## Recent policy and Regulatory developments pertaining to CBET



## Country Laws/Policies/Regulations pertaining to CBET

### AFGHANISTAN

1. Afghanistan Energy Efficiency Policy (Draft 2016)
2. Afghanistan-Renewable-Energy-Policy 2015 -English-and-Dari
3. Power Services Regulation Act 2016

### BANGLADESH

1. Quick enhancement of electricity supply (Special provisions) Act, 2010

### BHUTAN

- 1- bhutan\_sustainable\_hydropower\_policy\_2008
- 2- dhps2-1
- 3- Electricity\_act\_2001\_Eng



## Country Laws/Policies/Regulations pertaining to CBET

### INDIA

- 1- MOP Guidelines\_CBTE\_05.12.16
- 2- MoP Designated Authority\_Order\_14.12.16
- 3- CEA Draft CBTE CBR 14.12.17
- 4- MOP Guidelines\_CBTE\_18.12.18
- 5- MoP Designated Authority\_Order\_24.12.18
- 6- CERC CBTE-Regulations2019
- 7- CERC SOR\_CBTE\_Regulations\_2019
- 8- 8 CEA DRAFT\_PROCEDURE\_DA\_25-April-2019.docx

### NEPAL

1. Electricity\_Act\_2049-english

### PAKISTAN

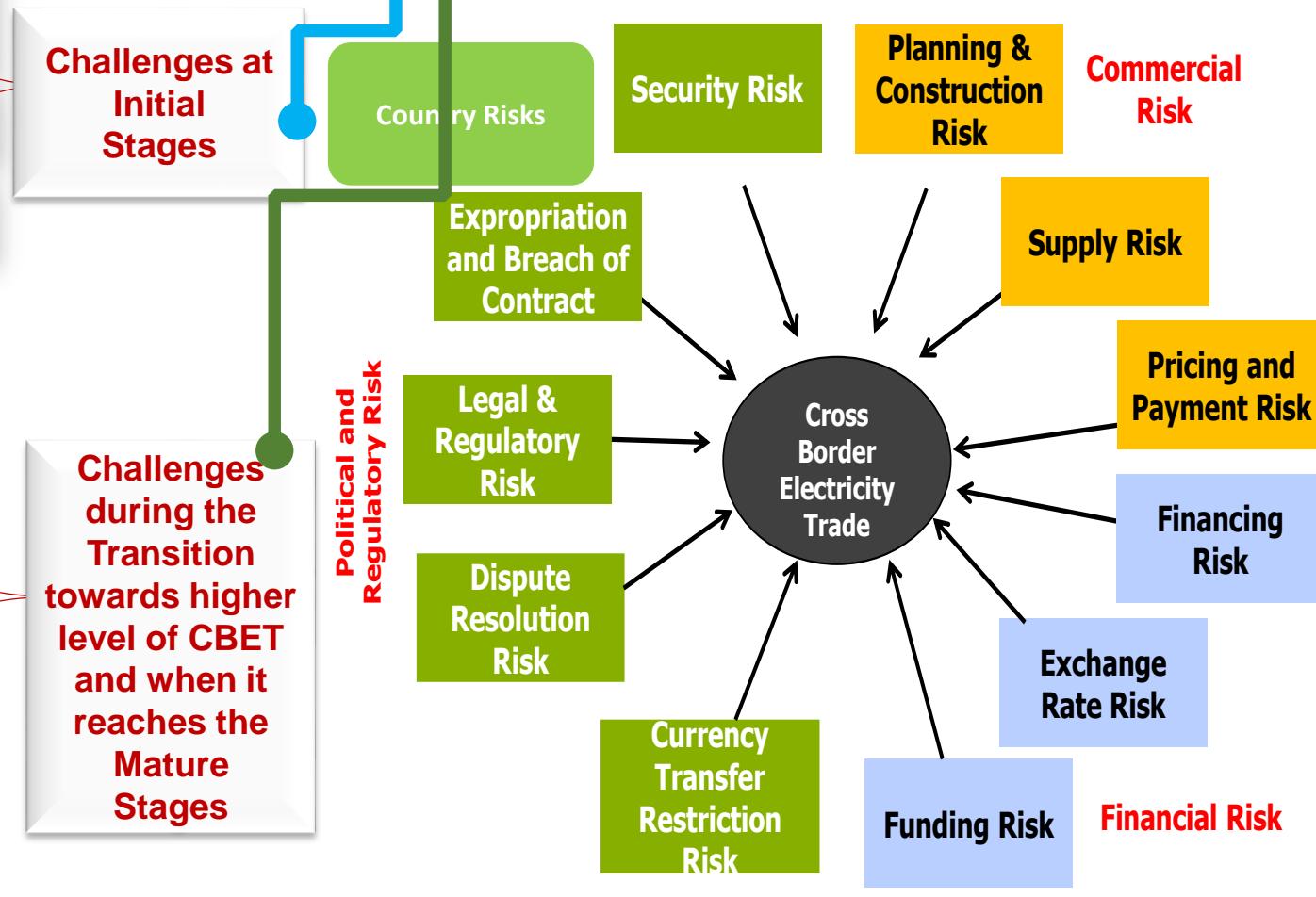
1. NEPRA Import of Power Regulations December 2017 Final

# SARI Assessment -Key Policy ,Regulatory Challenges & Risks for CBET

## Need for Policy Framework/Instruments/Mechanism

1. Political Conesus: Need of Bilateral Treaties, Regional Cooperation and Recognition of CBET/Trade in the National Policy, Law etc.
2. Government Commitment & Policy Coordination
3. Financial Challenges, Investment, Technical and Financial Viability
4. Mechanism of Inter-connection
5. Market form of Trade
6. Regional Cooperation on Regulatory and Contractual Aspects
7. Open Access in Transmission
8. Transmission Charges/Pricing
9. Transmission Plan
10. Commercial Mechanisms to Settle Imbalances
11. Dispute Resolution

**Motivation behind these Policy Framework/Instruments/Mechanism is to address the typical Risks in Cross-Border Projects.**





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# **GOI GUIDELINES FOR IMPORT/ EXPORT (CROSS BORDER) OF ELECTRICITY- 2018**



# GOI GUIDELINES FOR IMPORT/ EXPORT (CROSS BORDER) OF ELECTRICITY- 2018

## • Objective :

- a) **Facilitate import/ export** of electricity between India and neighbouring countries;
- b) Evolve a **dynamic and robust electricity infrastructure for import/ export** of electricity;
- c) Promote *transparency, consistency and predictability* in regulatory mechanism pertaining to import/ export of electricity in the country;
- d) **Reliable grid operation and transmission** of electricity for import/ export.

## Basic requirements for CBET and Trade Agreements

- Import/ export of electricity between India and the neighbouring country(ies) may be allowed through :
  - (a) through **bilateral agreement** between two countries
  - (b) through **bidding route**; or
  - (c) through **mutual agreements** between entities

Provided that in case of **tripartite agreements**, the cross border trade of electricity across India shall be allowed under the **overall framework of bilateral agreements signed between Government of India and the Government of respective neighbouring country(ies)** of the participating Entity(ies).

## Institutional Framework

- Import/ export of electricity by Indian entities shall be governed by the **rules/ regulations and policies framed and notified by Government of India/ Central Electricity Authority (CEA)/ Central Electricity Regulatory Commission (CERC).**
- Ministry of Power, Government of India shall appoint a ***Designated Authority*** for facilitating the process of approval and laying down the procedure for import/ export of electricity.

## Institutional Framework

- Any Entity proposing to Import or Export electricity may do so only after ***taking approval of the Designated Authority.***
- Approval of the Designated Authority will, however, **not be necessary** where the **import/ export** is taking place **under the Inter Government Agreement** signed by India and neighbouring country for specific project(s).
- ***Member (Power System), CEA has been designated as the Designated Authority.***

# Tariffs

## Tariff for import

- Tariff for import of electricity can be **competitive bidding as per India's Tariff Policy, or as per mutual agreement**. However:
- For import from hydropower plants, tariff can be determined by CERC, **if the generator approaches CERC through the exporting country's Government, and if the Indian entities agree for such tariff determination**. (7.1.1)
- For import of power based on G2G Agreements, tariff agreed in such Agreements will be applicable. (7.1.2)

## Tariff for export

- Tariff for export of electricity can be **through negotiations, or competitive bidding**. (7.2.1). However, for export of power based on G2G Agreements, tariff agreed in such Agreements will be applicable. (7.1.2)

# Tripartite arrangements, power exchanges and dispute resolution

## Tripartite arrangements:

- The guidelines (3.1) allow trade under mutual agreements with countries, including trilateral agreements, subject to there being bilateral agreements between Indian and the other two countries.
- Where tripartite agreement is signed for transaction across India, the **participating entities shall sign transmission agreement with Central Transmission Utility of India for obtaining the transmission corridor access**. Further, the transmission system in India for transmission of electricity across the territory of India under cross border trade of electricity shall be built after concurrence from Government of India and necessary Regulatory approvals. (8.6)

## Trade through power exchanges:

- Trading licensees in India can request for approval from Designated Authority to trade through India's power exchanges **on behalf of entities of neighboring country**. The quantum of trade will also be approved by the Designated Authority. (5.3)

## Dispute resolution

- For disputes between entities in different countries, arbitration will be conducted in a **mutually acceptable arbitration centre**. (9.2)

# Difference between old and New Guidelines

## Old (2016)

- Investment Restriction
- Only TAM in Power Exchange
- No explicit provision for Trilateral Power trade

## New (2018)

- No Investment Restriction
- All products of PX are allowed in cross border through Power Exchange
- Provisions for Trilateral Power trade

The Government / Indian ownership linked eligibility criteria for Participating Entities specified in the 2016 guidelines is removed in the new version. However The Designated Authority shall consider the application for approval of participating Entity(ies) only after the receipt of the equity pattern of ownership of the said Entity(ies) along with other details as prescribed by the Designated Authority. In case where there is a change in the equity pattern, the participating Entity shall intimate the Designated Authority within thirty days from such change in equity pattern for continuation of the approval.



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# Central Electricity Regulatory Commission (Cross Border Trade of Electricity) Regulations, 2019



# Definitions

- Central Electricity Regulatory Commission (Cross Border Trade of Electricity) Regulations, 2019, taken out by CERC on 8.3.2019.
- Significant terms :
- **‘Participating Entity’** means an entity approved by the **Designated Authority** for the purpose of cross border trade of electricity between India and any of the neighbouring countries or any entity as designated by Government of India for import or export of power through bilateral agreement between Government of India and Government of any of the neighbouring countries;

# Designated Authority

- **'Designated Authority'** or 'DA' means the authority designated by Ministry of Power, Government of India in accordance with the Guidelines;
- **Designated Authority** appointed by the Ministry of Power, Government of India shall be responsible for facilitating the process of approval and laying down the procedure for import and export of electricity.

# Transmission Planning Agency

- **‘Transmission Planning Agency’** or **‘TPA’** means the Planning Agency for India or neighbouring country as specified under Regulation 4(2) of these regulations;
- **Transmission Planning Agency** shall be responsible for planning of transmission system for the purpose of facilitating cross border trade of electricity and may coordinate with the Transmission Planning Agency of the concerned neighbouring country, wherever necessary. For India, this function shall be discharged by the Designated Authority.

## Planning of Cross Border Transmission Link

- The Cross Border Transmission Link between India and any neighbouring country shall be planned jointly by Transmission Planning Agencies of the two countries with the approval of the respective Governments keeping in view the future need for electricity trade between India and the neighbouring country

## Application Process and Compliances

- Application fee and timelines specified for connectivity to the Indian Grid, grant of long term and medium term access and for short term open access.
- Compliance with India's Scheduling and Despatch Code as per the Indian Electricity Grid Code.
- Compliance with Technical Standards for Connectivity to the Grid followed in India.
- Compliance with the Deviation Settlement Regulations within India.

## Settlement Nodal Agency

- **‘Settlement Nodal Agency’** or **‘SNA’** means the nodal agency as notified by Ministry of Power, Government of India for each neighbouring country for settlement of grid operation related charges;
- **Settlement Nodal Agency** shall be responsible for settling all charges pertaining to grid operations including operating charges, charges for deviation and other charges related to transactions with a particular neighbouring country in the course of cross border trade of electricity.

## Responsible Authority for transmission access and System Operation

- **National Load Dispatch Centre** shall act as the **System Operator** for cross border trade of electricity between India and the neighbouring countries and shall be responsible for **granting short-term open access** and **for billing, collection and disbursement of the transmission charges for short-term open access transactions** in accordance with the Sharing Regulations.
- **Central Transmission Utility** shall be responsible for **granting long-term access and medium-term open access** with respect to cross border trade of electricity between India and the neighbouring countries and for billing, collection and disbursement of the transmission charges in accordance with the Sharing Regulations.

## Basis of CBET

- Cross border trade of electricity between India and the neighbouring country(ies) shall be allowed through mutual agreements between Indian entity(ies) and entity(ies) of the neighbouring country(ies) under the overall framework of agreements signed between India and the neighbouring country(ies).



## Trading in the Indian Power Exchange

- **Any electricity trading licensee of India may, after obtaining approval from the Designated Authority, trade in the Indian Power Exchanges on behalf of any Participating Entity of neighbouring country, for the specified quantum as provided in the Approval subject to compliance with the applicable Regulations of the Commission.**

## Connectivity, Long Term Access, Medium Term Open Access and Short Term Open Access

- A Participating Entity located in a neighbouring country shall be required to seek **connectivity** or **long-term access** or **medium-term open access** or **short-term open access**, as the case may be, through separate applications.
- Applications for grant of connectivity or long-term access or medium-term open access shall be made to **CTU** and Applications for grant of short-term open access shall be made to **NLDC** under these Regulations.

# Technical Compliances

- All Participating Entities shall ensure that the ***voice and data communication facilities*** to telemeter power system parameters such as flow, voltage and status of switches or transformer taps etc. is installed in line with interface requirements.
- ***Recording instruments including Data Acquisition System/Disturbance Recorder/Event Logging Facilities/Fault Locator*** (including time synchronization equipment) shall be provided by all Participating Entities and shall always be kept in working condition in the Indian grid and transmission system of the neighbouring country for recording of dynamic performance of the system.

# Technical Compliances

- ***Reactive Power compensation and/or other facilities shall be provided*** by Participating Entities connected to Indian grid as far as possible in the low voltage systems close to the load points thereby avoiding the need for exchange of Reactive Power to/from Indian grid and to maintain voltage within the specified range.

# System Security Aspects

- The interconnection between India and the neighbouring country shall be ***monitored and controlled by the respective System Operators of the two countries, with proper coordination.***
- Provision of ***protection and relay settings shall be coordinated periodically*** by the Transmission Service Providers of both countries. These settings would be periodically reviewed as and when network configuration changes at either of the ends. If necessary, the respective countries may also put into place ***System Protection Schemes (SPS)*** to take care of any contingencies.
- ***Operational planning including outage plan*** shall be carried out by NLDC and its counterpart in the neighbouring country.

# Available Transfer Capability

- ***Total Transfer Capability (TTC), Transmission Reliability Margins (TRM) and Available Transfer Capability (ATC)*** for the cross border trade of electricity shall be assessed in advance by System Operators in India and the concerned neighbouring country and lower of the two values of ATC assessed by the two countries shall be considered for allowing cross border trade of electricity.

# Scheduling and Energy Accounting

- ***Scheduling shall be carried out for each 15-minute time block*** or such other duration as may be notified subsequently.
- ***Energy Accounting*** for all the electricity imported from a neighbouring country to India or exported from India to a neighbouring country ***shall be carried out on a net basis for each country by the concerned Regional Power Committee(s) (RPC(s)) in India.***
- The ***Settlement Nodal Agency***, acting on behalf of the selling entity or buying entity ***of the neighbouring country, shall be a member of the Regional Deviation Pool Account.***

## Scheduling and Energy Accounting

- ***Weekly meter readings (import or export in terms of MWh and MVARh) for actual injection or drawl by entities located in neighbouring country shall be provided to the concerned RLDC(s) or NLDC through Settlement Nodal Agency.***
- ***The charges for deviation from schedule at the inter-connection point shall be as per the DSM Regulations in India.***



## Event Information

- ***Events like tripping of elements impacting the electricity flow across the Cross Border Transmission Link, complete or partial blackout or any other such incidents affecting the grid operations would be reported by the concerned System Operator of India to the System Operator of the neighbouring country and vice versa.***



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