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Theme Presentation & Context setting

“Harmonization of Institutional, Operational, Legal and Regulatory Frameworks for Implementation and Operation of the Grid Interconnections and Trade among the BIMSTEC Countries”

Presented by

Rajiv Ratna Panda, Technical-Head, SARI/EI/IRADe

Working Session 3: Harmonization of Institutional, Operational, Legal and Regulatory Frameworks for Implementation and Operation of the Grid Interconnections and Trade among the Parties

Conference on Enhancing Energy Cooperation in the BIMSTEC Region , 25-26 February 2020 , BIMSTEC Secretariat, Dhaka



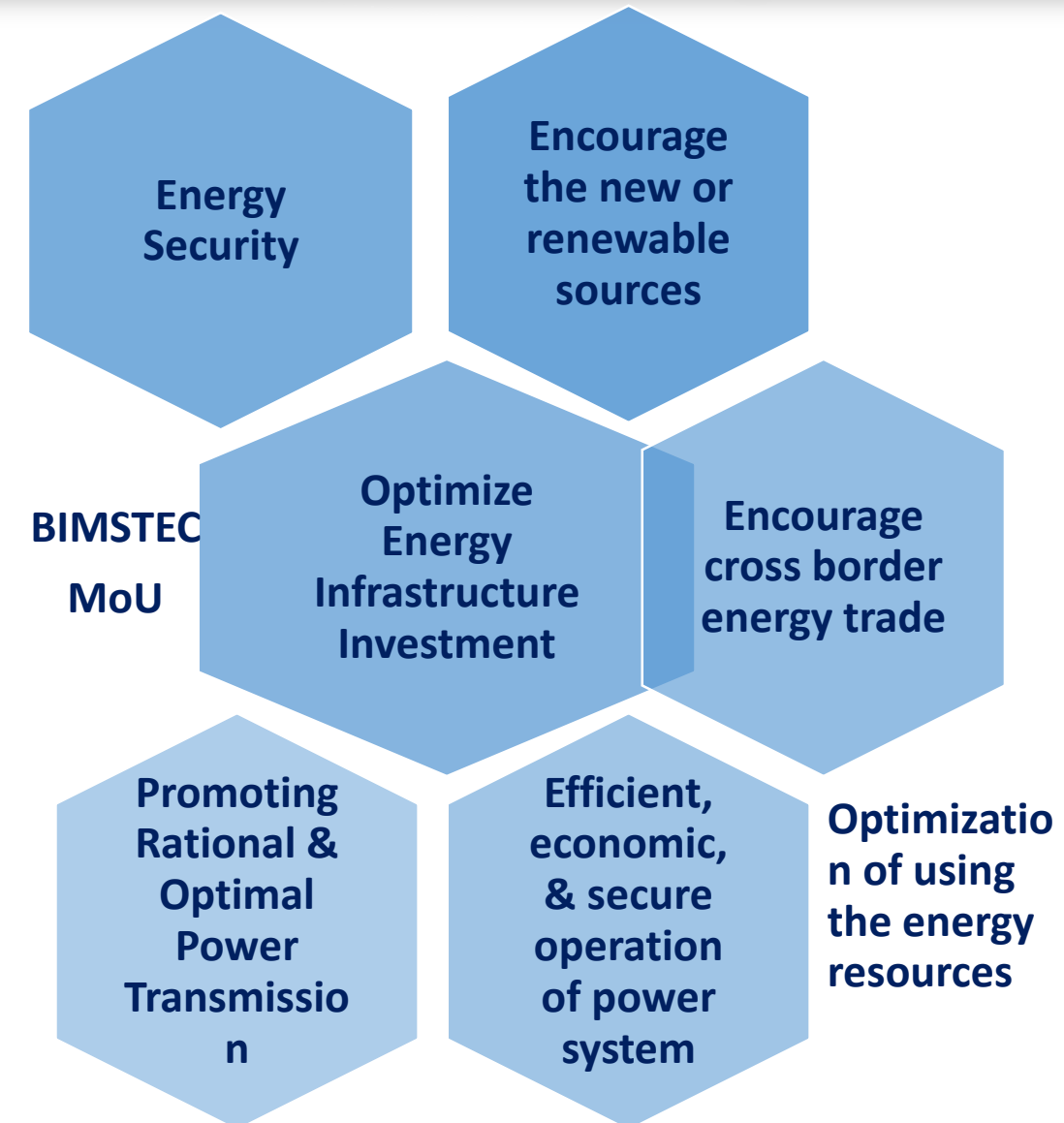


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- ❑ **Nature of problem : Long term, irreversible, investments, Design Principles**
- ❑ **BIMSTEC Regional Grid Development : Key ingredients**
- ❑ **Variations in Regulatory frameworks & Market structure**
- ❑ **Emerging Trends in CBET**
- ❑ **Harmonization and Coordination**
- ❑ ***India-CERC (Cross Border Trade of Electricity) Regulations, 2019***
- ❑ ***Points for Discussions***

Why do countries integrate grid & trade electricity ?

- Economic growth and Development ?*
- Access to cheaper source of supply ?*
- Clean and environmentally friendly energy?*
- Security of supply?*
- Energy Security ?*
- Access to Market ?*
- All above*



Long term, irreversible, investments

Requires proper, conducive and friendly ecosystem/
environments for investors



Long term financial viability of Projects.



Prospects for an adequate return on investments.



Regulatory risk should be as low as possible. (Reduce Perceived Risks too)



Balancing the interest of all stakeholders.

Design Regulatory Framework

Issues have to be addressed in the regulatory framework





Long term, irreversible, investments Regional Grid Development & Market Integration



Adequate conducive legal framework



Level playing field



Rule of the Market.

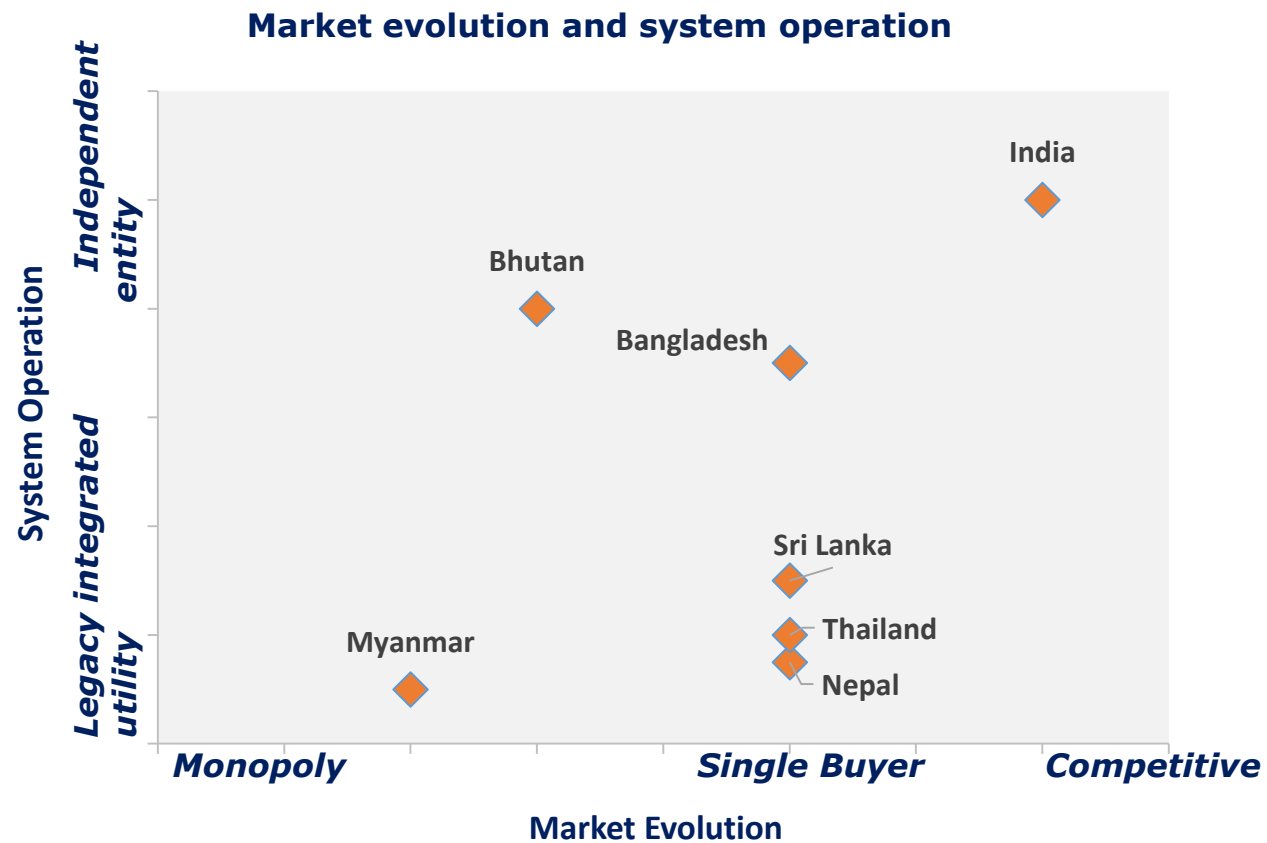
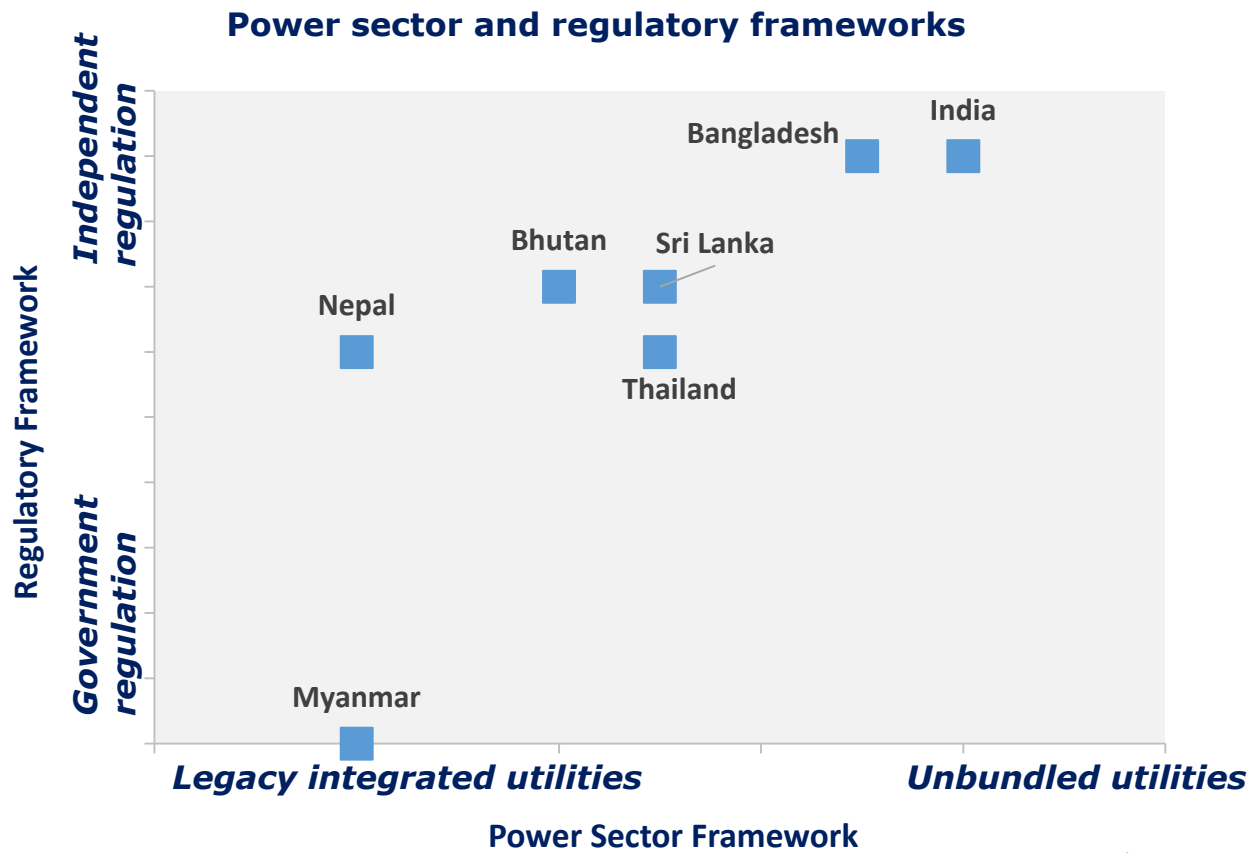


Regulatory power and capacity



Trust and Confidence

Variations in Regulatory frameworks & Market structure



** Includes subjective interpretations*

BIMSTEC Member States; substantially different levels of market evolution, varying frameworks for regulation & institutional framework.

Requires deeper level of coordination and harmonization, institutional Mechanism at various level

BIMSTEC Member States; it is Opportunity too to leapfrog, through learning and sharing from each other

Emerging Trends in CBET: Towards Market form of Trade (G-G & Market)

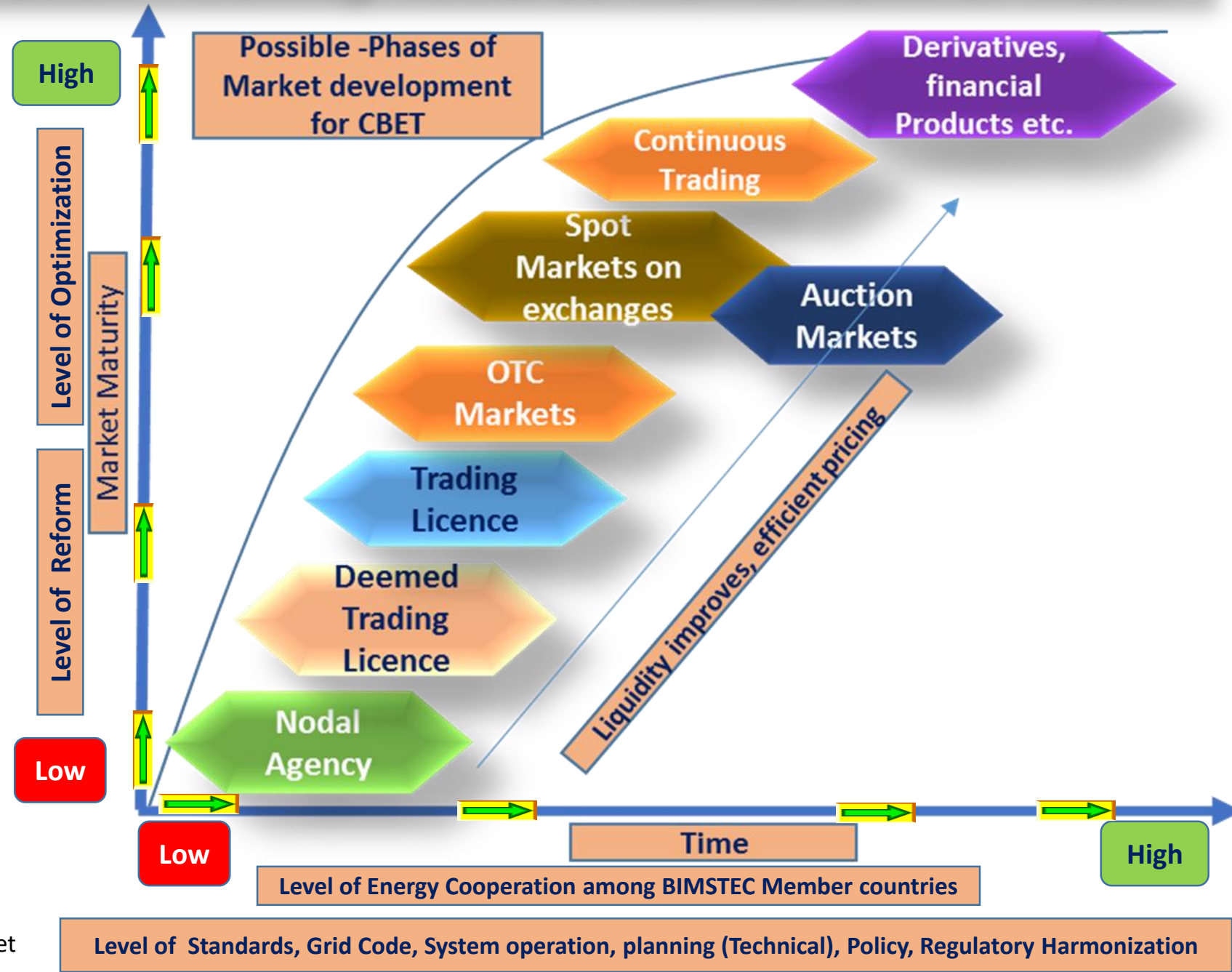
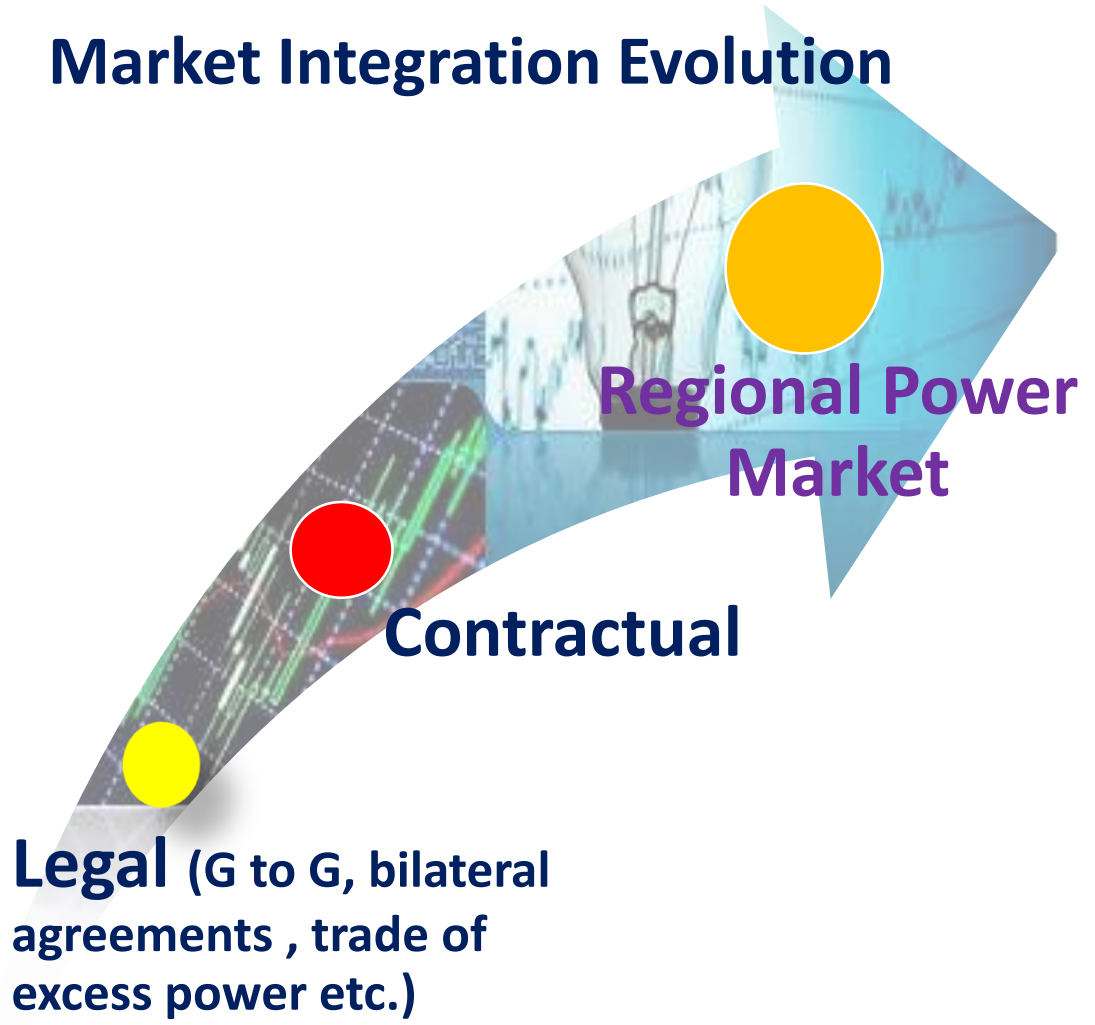
Country (~ CBET)	Capacity/Source (MW)	Type	Trader	Tenure in Years
Bhutan- India (~1800-1900 MW)	2136	G-G	PTC	35
	126	Commercial/Market based	TPTCL	25
India – Bangladesh (~1160 MW)	410	G-G	NVVNL	25/5 (Tripura)
	750	Commercial/Market based	PTC*, NVVNL, Sembcorp	15/3 (PTC)
India-Nepal (~550 MW)	237	G-G		
	280- Upto 350 MW	Commercial/Market based	NVVN/PTC**	Renewed Every year

Gol guidelines allows CBET through PXs, Trade is expected to start in near future

Bhutan-India; G-G- 1020 MW Tala, 336 MW Chhukha, 60 MW Kurichhu, 720 MW Mangdechhu | Market- 126 MW Dagachhu | India – Bangladesh; G-G - 250 NVVNL, 160 NVVNL (Tripura) | Sembcorp- 250 MW, NVVNL-300 MW(BPDB Short & Long Term contract with NVVN for 300 MW power from DVC) , PTC -200 MW (BPDB Short-term contract for 200 MW with WBSEDCL + long term with Meenakshi Power through PTC) | India-Nepal , BSPHCL(Bihar to Nepal) 200MW **PTC 20 to 35 MW of power to NEA on commercial terms during dry season -132 kV Tanākpur – Mahendranagar line

Harmonization and Coordination : Moving Towards Market form of Trade

BIMSTEC: Market Integration Evolution



An mix of Long Term, Medium Term, Short term and PX based Trade will be desirable one for A Journey towards the Vision of a Competitive Power Market

Regional Legal, Regulatory, Institutional Framework for CBET in BIMSTEC

A

Enabling Legal framework

Desirable to have **specific Legal** provisions for cross border energy/electricity trade. **Trading** as a **distinct** Activity, **desire** to have Power/energy Market Development. **License requirements** and the underlying rules/limitations

B

Regulatory Framework

Licensing for CBET: (Important Regulatory Tool for Trading)

Open Access (OA) to transmission system: (Competitive Market), **Grid Connectivity**

Setting of fair rules and procedures for non-discriminatory open access, Defining **application process, eligibility criteria, priority order** and nodal agency for OA (Cumbersome regulatory processes which causes decision making to be time consuming for governments and investors.)

C

Regulatory Framework

Transmission Pricing: (cost reflective & efficient)

Country's requirement and acceptability, Setting up **principles and mechanism for determination of economically efficient transmission pricing regime** and gradually concept of location specific pricing

Tariff framework in respective country power system through enabling regulations

Regional Legal, Regulatory, Institutional Framework for CBET in BIMSTEC

D

Regulatory Framework

Transmission Planning: (coordinated Regional Planning)
regional coordination mechanism of planners, National Transmission Plans to include details of CBET lines (progress towards developing a regional level master plan

E

Regulatory Framework

Harmonization of grid codes: (safe and reliable regional integrated system operation), **Dispute Resolution:** (transparent and fair legal framework), Dedicated **Cross Border Electricity Trade Regulations.**
Imbalance Settlement: (transparent common procedure), **Scheduling, dispatch, energy accounting and settlement procedures:**

F

Structured Institutional Framework

Structured Institutional Mechanisms/Committees/Forums at the Level of Regulators, Transmission utilities/planning Authorities (i.e. BGICC) , System Operation.
Committee/Mechanism to track & Monitor the progress of Implementation of MoU & advise needed interventions.

BIMSTEC MEMORANDUM OF UNDERSTANDING FOR ESTABLISHMENT OF THE BIMSTEC GRID INTERCONNECTION



Section 2.3 c)

Harmonization of **institutional, operational, legal and regulatory frameworks** for **implementation and operation** of the grid interconnections and trade among the Parties.



Section 2.3 a)

Power flow among participating Member States on a nondiscriminatory basis taking cognizance of available grid capacity, power supply position and **steps to harmonize technical, planning and operational standards of the grids** of the connected Parties.



Section 2.2 a)

Coordinate and cooperate in the planning, development and operation of interconnected systems **to optimize costs** while maintaining **satisfactory reliability and security**;



Section 2.2 b) Fully **recover the costs** and **share benefits equitably**, resulting from the reductions in investments on generation, transmission systems and fuel cost; .

Section 2.2 c) Provide **reliable, secure and economic electricity** supply to the Parties;

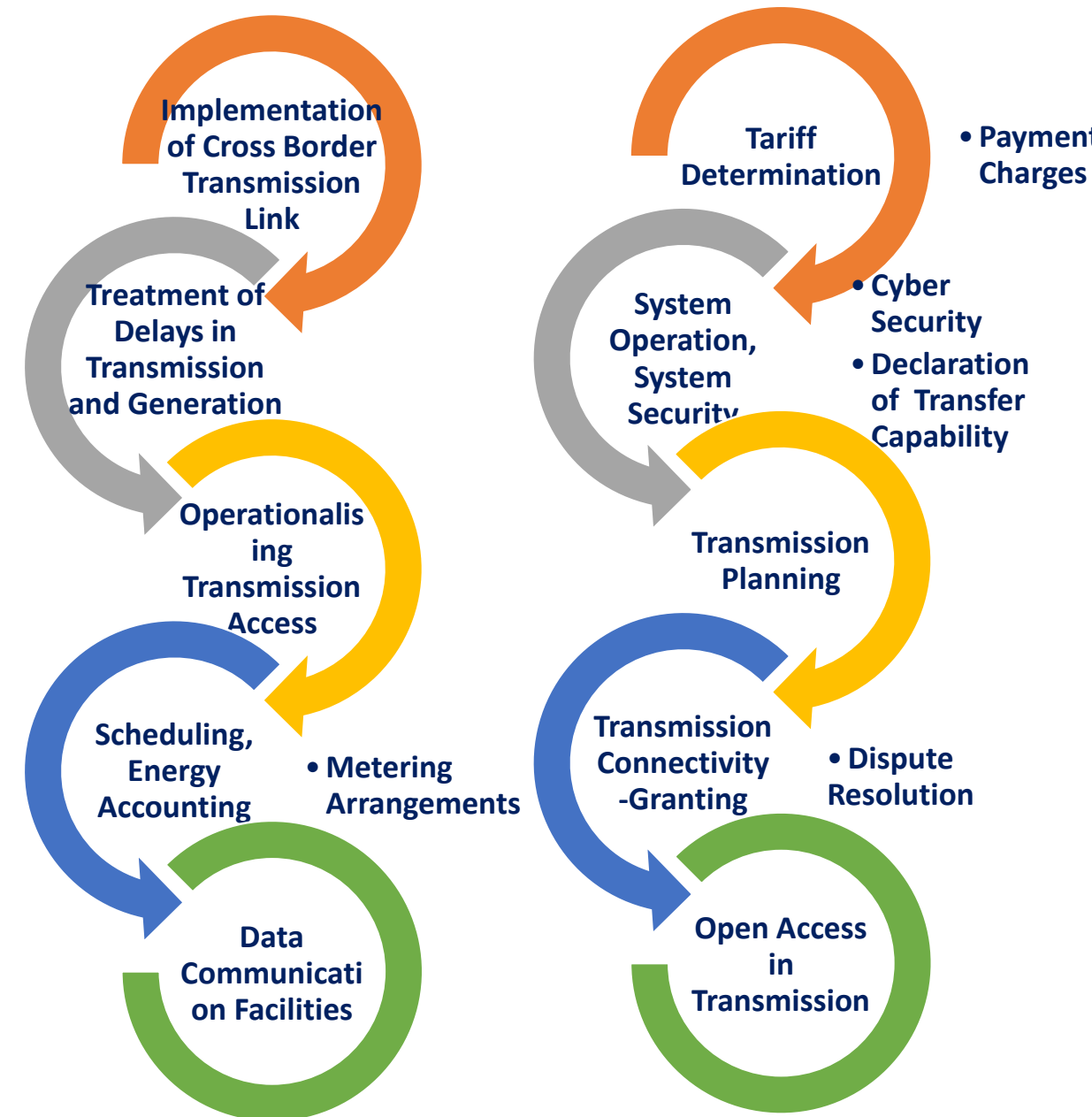


Section 2.2 d) Develop **transmission tariff framework** for trading of electricity

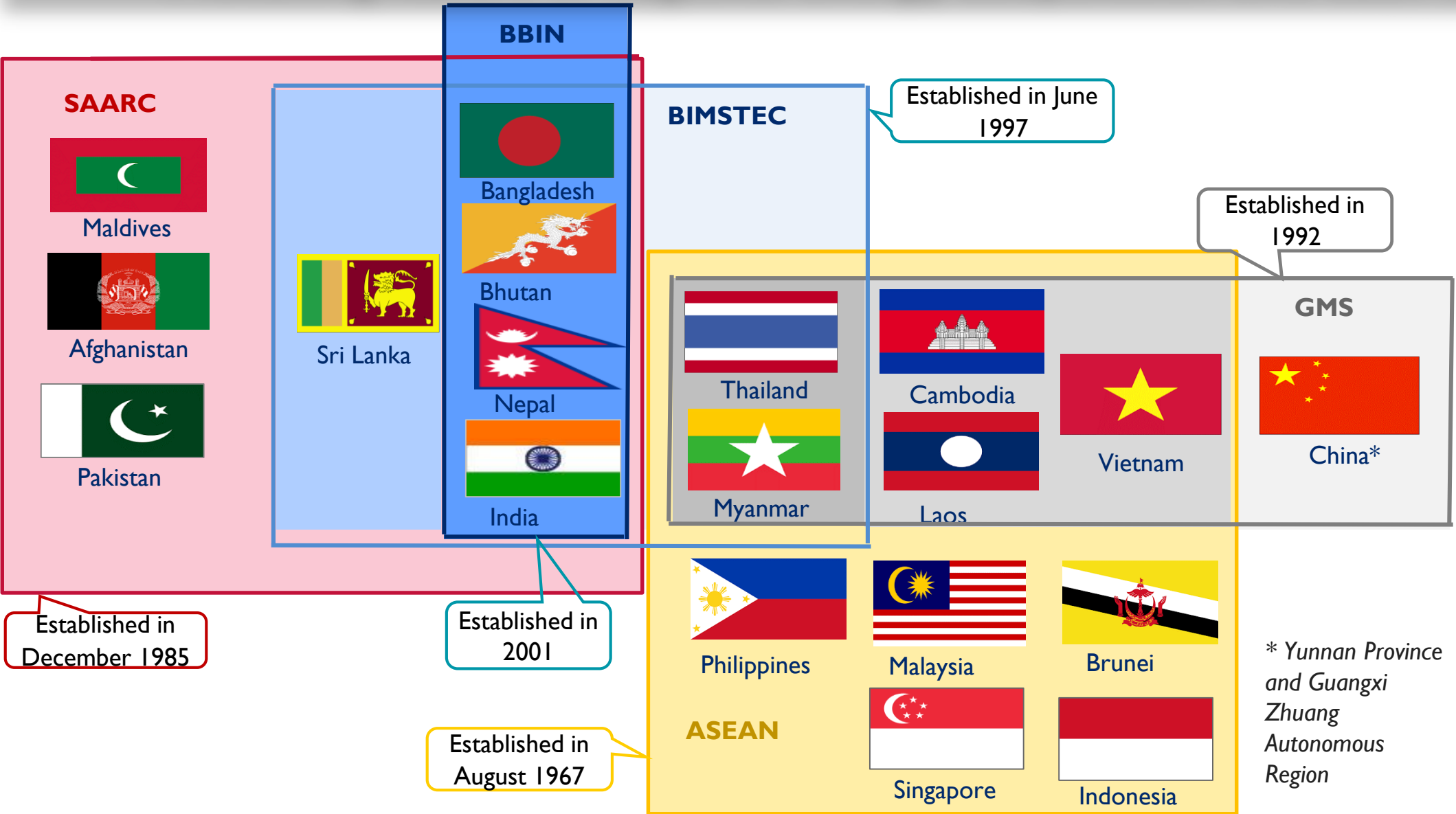
Section 2.2 e) Open up new avenues of cooperation **to promote electricity trade**

India-CERC (Cross Border Trade of Electricity) Regulations, 2019

- ❑ First of its Kind **dedicated Regulations** on CBET in the Region.
- ❑ Comprehensively address various aspects of **Cross Border Trade of Electricity**
- ❑ **Provides clarity, transparency, consistency** and predictability in regulatory mechanism
- ❑ **Can be learning process & starting point towards development of Regional Regulatory Framework**



Prevailing Nature of Regional Energy Cooperation and CBET in the BIMSTEC



There are five mechanisms dealing with regional/ sub-regional cooperation amongst the South Asian and Southeast Asian countries in energy sector which covers BIMSTEC Countries

- Regional Energy Cooperation and Cross Border Electricity Trade**
1. Bilateral
 2. Trilateral
 3. Sub-Regional
 4. Regional Electricity Trade Arrangements

* Yunnan Province and Guangxi Zhuang Autonomous Region

Important to leverage the learnings of Institutional, Operational, Legal and Regulatory, Operational Harmonisation form various initiatives

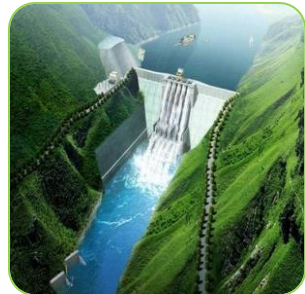
"Harmonization of Institutional, Operational, Legal and Regulatory Frameworks for Implementation and Operation of the Grid Interconnections and Trade among the BIMSTEC Countries by Rajiv Ratna Panda, Technical-Head, SARI/EI/IRADe" Conference on Enhancing Energy Cooperation in the BIMSTEC Region , 25-26 February 2020 , BIMSTEC Secretariat, Dhaka

Points for Discussions

- ✓ What are some **key Institutional, Legal and Regulatory, technical** requirements
- ✓ Does the current Institutional, Legal and Regulatory, technical frameworks are **adequate**; What are the Gaps if any?
- ✓ What are the **minimum Institutional, Legal and Regulatory, technical** requirements needs to be put in place to move from **bilateral to Trilateral /Multilateral Power Trade** in the BIMSTEC Region.
- ✓ How to move towards development a **regional regulatory framework** for CBET.
- ✓ What are the important measures related to Connectivity, Open Access, **Transmission Pricing, imbalance settlement** and Grid Code etc. need to be taken by different countries for enhancing the regional trade.



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Thank You

Contact

rajivratnapanda@irade.org

rajivratnapanda@gmail.com

+91-9650598697



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Why the Need for Policy & Regulatory Coordination/Harmonization ?

- Power and energy sector are **highly regulated** in South Asia.
- SA countries have different stage of evolution in terms of legal, regulatory and Policy Framework. **Need complementing regulatory frameworks.** →
- Strong **Political –Economy** of the Power/Energy Sector, Strategic nature.
- Development of Cross border projects, **mitigation of Investment risks** requires a robust legal, regulatory and Policy Framework.
- While each country is sovereign by itself, there is a **need to coordinate/ harmonise** the laws/rules/regulations related to CBET.
- Harmonised policy and regulatory framework for CBET **brings consistency, predictability and Minimize perception** of regulatory and Policy risks.

CERC CBTE regulation relied upon domestic Regulation and Policy Frameworks

1. Tariff Policy
2. Tariff Regulations
3. Open access Regulation
4. Connectivity Regulation
5. Metering Regulation
6. Sharing of Inter State Transmission Charges and Losses
7. DSM Regulations
8. Scheduling and Dispatch rule.....
9.

Key Risk/Perceived Risks of Cross Border Electricity Trade Projects

Why Cross-border Electricity Trade are Risky

- Project risks in general tend to be high without a comprehensive Policy, Regulatory framework for **large CBET project development.**
- Cross-border element greatly amplifies the risks due to **geopolitical, economic and trade related factors.**
- Even projects that appear to have feasible, rationale, economical **in practice struggle to get it financed and built.**
- Project risks in general tend to be high in **countries without wide experience on large project development.**



Regulatory: What happens if the domestic Policy, regulatory framework changes which impacts CBET project/Investment ? What is the protection available to buyers/sellers/Investor ?

Socio Political: What happens if for socio-political reasons the flow is prevented in the exporting, intermediary (if relevant) or importing country ?

Economic: What happens if the economic assumptions on the project changes? What is the protection available to buyers and sellers ?

Trade Barrier: What happens if a tax or duty that affects the economic fundamentals is imposed ?

Infrastructure: What happens if the infrastructure to transfer the energy is not built or is not available when needed ?