

**MINUTES OF THE 30<sup>th</sup> STEERING COMMITTEE MEETING (SCM)  
OF SOUTH ASIA FORUM FOR INFRASTRUCTURE REGULATION  
(SAFIR)**

**DATE: 12<sup>TH</sup> DECEMBER, 2024  
VENUE: HOTEL LE MEREDIAN,  
NEW DELHI, INDIA  
List of Participants: Appendix-I**

Chairperson SAFIR/CERC, in his opening remarks, welcomed all members to the Steering Committee meeting and congratulated all Members on the silver jubilee of SAFIR, marking 25 years of progress where SAFIR is celebrating not only its achievements but also SAFIR's steadfast commitment to shared goals. He remarked that over the years, SAFIR has grown into a close-knit family of 37 members, and he welcomed the new members of SAFIR, the Telecom Regulatory Authority of India, Power Exchange India Limited, ONGC Tripura Power Company Limited and Meghalaya State Electricity Regulatory Commission. He also welcomed Mr. Jalal Ahmed, who has taken charge as Chairperson of the Bangladesh Energy Regulatory Commission (BERC), Mrs. Deki Choden, Chief Executive Officer of the Electricity Regulatory Authority of Bhutan (ERA), Prof. K. P. Lalith Chandralal, Chairperson of the Public Utilities Commission of Sri Lanka (PUCSL) who were joining virtually and Mr. Ram Prasad Dhital, Chairperson of the Electricity Regulator Commission of Nepal (ERCN) who joined as a special invitee. He observed that the key agenda items include updates on the Common Minimum Grid Code (CMGC) adopted in January 2024, which aims to unify the regional power market. Reports on the Regulatory Roadmap, Model Regulations, and discussions on the future direction of SAFIR's Core Course are also emphasized. He commended the Secretariat's efforts and expressed confidence in engaging in discussions.

2. In his opening remarks, Chairperson of Bangladesh ERC expressed his happiness to be a part of this Forum and informed the Members of SAFIR that, in the past, in his previous assignments, he was associated with SAFIR through training programs in 2001 and 2004. He acknowledged the significance of the recently approved Common Minimum Grid Code, which marks a crucial step toward enhancing regional energy cooperation. He added that Bangladesh currently imports over 2,000 MW of electricity from India and has recently begun importing from Nepal, facilitated through Indian transmission lines and thus expressed confidence in the importance of this arrangement and the growing potential for regional collaboration. He reflected on the discussions about energy cooperation with other regions, such as the ASEAN Centre for Energy and GCC (Gulf Cooperation Council), and expressed optimism about overcoming challenges through collaboration. He concluded with a commitment to continued regional cooperation and gratitude for the opportunity to address the Forum.

3. Prof. K.P. Lalit Chandralal, Chairperson, Public Utilities Commission of Sri Lanka, who joined virtually, expressed his gratitude for the opportunity to address the 30<sup>th</sup> Steering Committee meeting and highlighted the value of SAFIR's collaborative platform, particularly for countries like Sri Lanka, who face high energy costs. He emphasized the importance of achieving concrete outcomes that align with the shared goals of member nations. On behalf of PUCSL, Sri Lanka, he reaffirmed their commitment to SAFIR's objectives and future initiatives, expressing eagerness to continue active participation and collaboration.

4. In his opening remarks, Chairperson, Electricity Regulatory Commission of Nepal (ERCN) discussed the seasonal surplus in summer and shortages in winter in Nepal, emphasizing the need for integrated mechanisms to balance generation. He also remarked on an agreement with Bangladesh to export electricity via the Indian grid, aiming for 10,000 MW in exports over a decade, with 5,000 MW targeted for Bangladesh, which highlighted the need for regional mechanisms to enhance energy security and reduce trade deficits. He shared progress in institutionalizing the ERC since its establishment 5.5 years ago and reaffirmed support for regional decarbonization efforts. Thereafter, he outlined the development of a Grid Code for cross-border trade (supported by USAID) and a market design (backed by the World Bank) in line with the recommendations of the Joint Working Group (JWG) of SAFIR.

5. The Steering Committee thereafter took each of the agenda items for discussion.

## **AGENDA ITEM 1: CONFIRMATION OF THE MINUTES OF THE 29<sup>th</sup> STEERING COMMITTEE MEETING**

6. Joint Chief (RA), CERC explained the actions taken on various points in the minutes of the 29<sup>th</sup> Steering Committee meeting and sought confirmation of the minutes placed before the Committee. One of the action points with respect to SAFIR Conference, Chairperson, Uttar Pradesh ERC (UPERC), offered to host the Conference in Varanasi, Uttar Pradesh, India on 7<sup>th</sup> March 2025. Chairperson, SAFIR/CERC thanked Chairperson UPERC for his offer and informed that SAFIR would bear all costs for the Conference through its budget for FY 24-25

After discussion, the minutes of the 29<sup>th</sup> SCM were confirmed.

## **AGENDA 2: ACCOUNTS RELATED ITEMS**

### **(i) Amendments in the Memorandum of Association and Rules & Regulations of SAFIR**

7. Joint Chief (RA), CERC apprised the Members of decisions taken in previous ECMs & SCMs with respect to various changes in the MoA and R&R of SAFIR. In line with the said decisions, the consolidated changes to the MoA and R&R of SAFIR were approved by the SC Members. Accordingly, the revised MoA and R&R is placed at **Annexure-I**.

**(ii) Budget for the FY 2024-25.**

8. Joint Chief (RA), CERC apprised the SC of the salient features of the SAFIR budget for the F.Y. 2024-2025, including the projected income and expenditure, after which the SC approved the budget of SAFIR for the FY 2024-25.
9. The SC was also informed of the in-principle decision of EC to conduct a study on cross-border transmission, the terms of reference of which will be worked out by SAFIR Sectt.

**(iii) Audited Accounts of SAFIR for the FY 2023-24.**

10. Joint Chief (RA), CERC apprised the salient features of the Annual Audited Accounts of SAFIR for the F.Y. 2023-2024, post which the Steering Committee Members approved the Annual Audited Accounts of SAFIR.

**(iv) Membership in SAFIR- Update.**

11. Joint Chief (RA), CERC apprised the SC that while currently, SAFIR comprises 37 Members from India & 3 Members from outside India, the Electricity Regulatory Commission of Nepal will also be taking necessary steps to join SAFIR from the next financial year (2025-2026) by enlisting the support of USAID for payment of membership fees for the 1<sup>st</sup> year.
12. Chairperson, ERC of Nepal, further added that his ERC proposes to host a Retreat for SAFIR members on Policy & Regulations in Nepal.
13. In addition, as directed by the Executive Committee, SAFIR Sectt will be writing to all the SAFIR EC countries and ERC of Nepal for suggestions to invite more utilities from their countries into the fold of SAFIR.

**(v) Activities of IICA for FY 2024-25**

14. Joint Chief (RA), CERC apprised the Members that IICA, one of SAFIR's members, has been offering activities with respect to publishing 3 quarterly e-newsletters and 2 online webinars during the F.Y. 2023-2024 and that they have expressed their interest to continue with these activities for F.Y. 2024-25 as well. The SC was also informed that the EC had recommended the continuation of services by IICA to SAFIR Sectt. After discussion, the Members approved the proposal of IICA to continue with their activities for the F.Y. 2024-2025 as well, at the same cost as has been charged during the F.Y. 2023-2024.

### **AGENDA ITEM 3: SAFIR CORE-COURSE FOR FY 2024-25**

15. The SC was informed of the decision of the EC to award the assignment of conducting the SAFIR Core Course to IIMA, with an increased batch size so as to accommodate One participant from each Member organization. To this effect, the cost would be utilized from the surplus available in the budget of SAFIR.

16. The SC agreed to the decision of the EC and the SAFIR Sectt was directed to write to IIMA to initiate conducting the Core Course in this financial year.

### **AGENDA ITEM 4: SAFIR ANNUAL REPORT**

17. The SC was informed of the decision of the Executive Committee to seek additional inputs from all Members of SAFIR on the draft annual report of SAFIR in view of limited inputs from Members. After detailed deliberations, the SC decided that the SAFIR Secretariat would update the report with additional inputs from Members and thereafter circulate the final version.

### **AGENDA ITEM 5:**

#### **A) UPDATES AND PRESENTATION BY CONSULTANTS / AGENCIES ASSISTING SAFIR WG AND JWG**

18. JC(RA) apprised the SC that there are two working groups in SAFIR, i.e., a Joint Working Group which operates at the level of Chairpersons and Members of the SAFIR EC countries and a smaller Working Group which comprises senior officers from EC member countries. USAID and SAREP are providing technical support to these Working groups.

19. As the activities of both Working groups involve various studies, the EC recommended that the activities and deliverables of the Officer Working Group be merged with the Joint Working Group to streamline efforts and that the ToR for the Joint Working Group be updated to reflect this consolidation. Additionally, the EC decided that activities with respect to capacity building, preparation of compendiums, etc., will be managed by the SAFIR Secretariat.

#### **I. COMMON MINIMUM GRID CODE**

20. The representatives of SAREP, assisting the JWG, made a detailed presentation on the Common Minimum Grid Code (**Annexure II**). The main objective is to facilitate cross-border electricity trading among South Asian countries by setting common minimum rules, guidelines, and standards and ensuring secure, reliable, economical, and efficient operation and planning of the interconnected South Asian grid.

21. Some of the key components of CMGC are as follows:

- i) **Planning Code:** Focuses on planning cross-border transmission systems. Promotes coordination among national transmission utilities. Ensures reliability and stability of cross-border grids.
- ii) **Connection Code:** Governs safe and reliable connection of national grids to the South Asian grid. Ensures new connections meet standardized technical requirements.
- iii) **Operation Code:** Defines operational parameters like frequency, voltage, and fault reporting. Includes protocols for coordinated outage planning and protection systems.
- iv) **Scheduling and Dispatch Code:** Establishes uniform procedures for scheduling and dispatching electricity across countries. Aligns timelines and processes for intercountry power flows.
- v) **Administration of CMGC:** Initially to be overseen by the JWG and Joint Steering Committee, future management could transit to the Forum of Electricity Regulators. Including provisions for code modifications and updates as needed, this Code aims to create a standardized framework for effective cross-border electricity trading, benefiting all participating countries.

## **II. POWER MARKET DESIGN FOR FACILITATING ELECTRICITY TRADE AMONG SAFIR MEMBER COUNTRIES**

22. Representative of the World Bank (**Annexure III**) outlined the development of a regional electricity market in South Asia, drawing on experiences from advanced and developing markets worldwide. Key points include:

**a. Regional Market Overview:**

The paper synthesizes lessons from Europe, North America, Africa, Latin America, and the Middle East, identifying three key elements for successful regional markets: political support, legal/commercial agreements, and institutional frameworks.

**b. Current situation in South Asia:**

South Asia's electricity trade is primarily bilateral. Recent steps, such as the trilateral agreement between Nepal and Bangladesh through the Indian grid, mark progress toward regional integration.

**c. Two Key Elements for Regional Integration:**

- **Soft Side:** Policy, institutions, market rules, and regulations.
- **Hard Side:** Transmission infrastructure, generation, and financing for infrastructure development.

d. Market Design Models:

- Three models were assessed:

Model 1: Standardized bilateral trading.

Model 2: Secondary regional market with regional market rules and institutions.

Model 3: Full integration into a single regional market (long-term vision).

- Recommended Model: Tight coupling model, building on existing arrangements with gradual integration and flexibility.

e. Phased Approach:

The development will start with pilot projects, testing bilateral contracts and transmission interconnections, focusing on market rules and governance. The transition will take place in stages, with initial steps leading to regional market operations by 2030.

f. Market Governance:

A governance framework is essential, with an intergovernmental agreement, an executive committee, and advisory groups overseeing the market. The committee will oversee the development of the market rules, grid code, and other operational aspects.

23. Chief (RA), CERC provided a concise summary of the comments received on the report of the Power market design as follows:

- i. Sri Lanka: Agreed with the proposed market design and governance framework. Emphasized the need for expediting regional transmission links, revisiting the timeline for regional market formation and starting governance setup even with minimal country participation.
- ii. Bhutan: Optimizing governance structure by reducing the number of committees. Starting with a simpler framework and gradually evolving.
- iii. Nepal: Provided both general and specific comments. Supported the market model's potential for higher liquidity and flexibility but highlighted the need for clarifications on certain aspects.
- iv. India (CERC): Provided detailed feedback in the form of noting as follows:
  - Challenges of diverse readiness levels among countries.
  - Importance of infrastructure readiness and operational complexity management.
  - Concerns about liquidity in a regional market, especially if it diverges from India's power exchanges.

24. After a detailed presentation, the Steering Committee appreciated the efforts of the consultants in assisting the JWG in this entire process. They decided that the referred reports be circulated to the SAFIR members for their feedback and the comments received thereof will be discussed in the next meeting of the JWG.

**B) UPDATE AND PRESENTATION BY CONSULTANTS ASSISTING THE SAFIR WG ON REPORTS ON:**

**i. DEVELOPING A REGULATORY ROADMAP FOR ELECTRICITY/ENERGY EXCHANGE AND ENERGY COOPERATION**

## AMONG SOUTH ASIAN COUNTRIES

- ii. **ASSESSING THE POTENTIAL BENEFITS OF CROSS BORDER ELECTRICITY TRADE FOR AFFORDABLE SUPPLY OF ELECTRICITY**
- iii. **MODEL REGULATIONS RELATED TO CBET (IN COUNTRIES THAT CURRENTLY DOES NOT HAVE CBET REGULATIONS)**
- iv. **TECHNICAL ASSISTANCE AND SUPPORT TO REGULATORS ON ENHANCING INSTITUTIONAL REGULATORY CAPACITY**

25. The consultants assisting the SAFIR WG made presentations (**Annexure IV & V**) on two key studies on energy cooperation and cross-border trade. The salient features include:

**a) Regulatory Roadmap for Energy Cooperation:**

- i. Development of a common, minimum harmonized regulatory framework and templates.
- ii. The framework includes country-specific adaptations, a roadmap, and associated regulatory changes.
- iii. Focus areas: harmonization of grid codes, institutional frameworks, planning, open access, and scheduling.

**b) Potential Benefits of Cross-Border Trade:**

- i. Identification of prerequisites for countries to engage in cross-border trade beyond government-to-government agreements.
- ii. Introduction of a master regulation to guide countries in developing their frameworks.
- iii. Recommendations on harmonizing terminologies and institutional roles and enabling seamless coordination.

26. Thereafter, a presentation (**Annexure VI**) was made highlighting a detailed quantitative study assessing the benefits of enhanced regional energy cooperation in South Asia, focusing on cross-border electricity trade and ancillary services. Key points include:

**a) Scope and Methodology:**

- i. Detailed modelling power systems operations of Bangladesh, Bhutan, India, Nepal, and Sri Lanka (BBINS) are around 8,760 hours in a year.
- ii. Examined scenarios including unrestricted transmission and cross-border reserve sharing.

**b) Findings:**

- iii. **Cost Savings:** Enhanced cooperation could save up to \$11 million by 2035 (present value).
- iv. **Efficiency Gains:** Reduced start-up /shutdown costs and lower average power costs (up to 5%).
- v. **Grid Resilience:** Sharing reserves reduces the need for separate investments in balancing capacities.
- vi. **Capacity Credits:** Enhanced cooperation boosts renewable energy reliability, increasing capacity credits by 35%.

**c) Transmission and Trade:**

- i. Significant transmission augmentation is necessary for deeper integration.
- ii. Shadow pricing analysis shows that 50% of transmission costs can be recovered during peak demand hours.

After detailed deliberations, the SC decided that the said reports may be circulated to all SAFIR members for further vetting and comments before discussions in the next JWG of SAFIR.

27. Appreciating the presentation on “Assessing potential benefits of Cross Border Electricity Trade for an affordable supply of electricity”, Chairperson, CERC invited the consultants working on the said report to make a presentation in CERC and also invited EC Member countries of Bhutan, Bangladesh, Sri Lanka, and Nepal to join online along with Grid India and PGCIL.

**VOTE OF THANKS**

28. The Secretary, SAFIR/CERC, expressed gratitude to everyone for attending the meeting and contributing to the discussions. He appreciated the presentations on crucial subjects which will foster cross-country transactions and regional markets. He further invited all SAFIR members to engage in active participation in future events, especially the upcoming annual conference in Varanasi. He expressed his special thanks to the SAFIR secretariat for their tireless efforts in organizing the meeting.

29. The meeting ended with a Vote of thanks to the Chair

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**LIST OF PARTICIPANTS OF THE 30<sup>th</sup> STEERING COMMITTEE MEETING OF  
“SAFIR” HELD ON 12<sup>th</sup> DECEMBER, 2024**

<b>S. NO.</b>	<b>NAME</b>	<b>ORGANIZATION</b>
01.	Mr. Jishnu Barua Chairperson, CERC & SAFIR	Central Electricity Regulatory Commission (India)
02.	Mr. Jalal Ahmed Chairman, BERC	Bangladesh Energy Regulatory Commission (Bangladesh)
03.	Prof. K.P. Lalith Chandralal Chairperson, PUCSL	Public Utilities Commission of Sri Lanka (Sri Lanka) [Online]
04.	Ms. Deki Choden CEO, ERA	Electricity Regulatory Authority, Bhutan [Online]
05.	Mr. K.B. Kunwar Chairperson	Sikkim SERC (India)
06.	Mr. Anil Mukim Chairperson	Gujarat ERC (India)
07.	Mr. P. Ravi Kumar Chairperson	Karnataka ERC (India)
08.	Mr. Arvind Kumar Chairperson	Uttar Pradesh ERC (India)
09.	Mr. Amir Subhani Chairperson	Bihar SERC (India)
10.	Dr. (Justice) Devaraju Nagarjun Chairperson	Telangana SERC (India)
11.	Mr. Gajendra Mohapatra Chairperson I/c.	Odisha ERC (India)
12.	Mr. A.J. Wilson Member	Kerala SERC (India)
13.	Mr. Paramjeet Singh Member	Punjab SERC (India)
14.	Mr. S.R. Narasimhan CMD	Grid Control of India Ltd. (India)
15.	Mr. Dilip Rozekar Executive Director (Com.)	Power Grid Corporation of India Ltd., India
16.	Mr. Debjani Dey Executive Director (Com.)	NEEPCO Ltd. (India)
17.	Mr. Harish Saran Executive Director	PTC India Ltd. (India)
18.	Mr. Amit Dabas Head Commercial	OTPC (India)
19.	Mr. A.K. Chaudhary Secretary	TRAI (India)
20.	Mr. Anand Sagar Pandey General Manager (Com.)	NTPC Ltd. (India)
21.	Mr. Rohit Bajaj Jt. MD	IEX (India)
22.	Mr. A.K. Bishoi COO	PXIL (India)

23.	Mr. Navneet Sharma Director General	Cuts Institute for Regulation & Competition, India
24.	Mr. Harpreet Singh Pruthi Secretary, CERC	Central Electricity Regulatory Commission (India)
25.	Dr. Sushanta K. Chatterjee Chief (Regulatory Affairs), CERC	Central Electricity Regulatory Commission (India)
26.	Ms. Swetha Ravi Kumar	FSR Global Council (India)
<b>SPECIAL INVITEES</b>		
27.	Mr. Ram Prasad Dhital Chairman, ERC	Electricity Regulatory Commission, Nepal
28.	Ms. Monali Zeya Hazra Regional Specialist	USAID
29.	Mr. Pankaj Batra Consultant	SAREP
30.	Mr. Rajiv Ratna Panda Regional Power Lead	SAREP
31.	Mr. Maitreyi Karthik Regional Energy Analyt	SAREP
32.	Mr. Rohit Pathania	SAREP
33.	Mr. Arun K.A. Director	Deloitte
34.	Ms. Suruchi Uppal	KPMG
35.	Ms. Srishty Jain	KPMG
<b>SAFIR SECRETARIAT</b>		
36.	Ms. Rashmi Somasekharan Nair Jt. Chief (Regulatory Affairs)	CERC, New Delhi (India)
37.	Ms. Sukanya Mandal Asst. Chief (RA)	CERC, New Delhi (India)
38.	Mr. Debasish Roy Asst. Chief (RA)	CERC, New Delhi (India)
39.	Mr. Pankaj Rana Asst. Secretary	SAFIR / CERC, New Delhi (India)
40.	Mr. Sushil Kumar Arora Administrative Officer	SAFIR, New Delhi (India)
41.	Mr. Nilesh Diwan Accounts Officer	SAFIR, New Delhi (India)
42.	Mr. M.M. Prasad Sr. Accounts Officer	FOR
43.	Ms. Jijnasa Behera R.O.	FOR
44.	Mr. Davinder Kumar T.O. (IT)	FOR



## Annexure-I

**MEMORANDUM OF ASSOCIATION**  
**SOUTH ASIA FORUM FOR INFRASTRUCTURE REGULATION**  
**(SAFIR)**

**1. NAME OF THE ASSOCIATION:**

The name of the Association shall be “South Asia Forum for Infrastructure Regulation” (hereinafter referred to as “SAFIR”).

**2. OFFICE:**

- (i) The Secretariat of SAFIR shall be located at such place as may be decided by the Steering Committee from time to time.
- (ii) Presently, the Secretariat of SAFIR is with the regulatory body from India, namely, the Central Electricity Regulatory Commission, having its office at 8<sup>th</sup> Floor, Tower-B, World Trade Centre, Nauroji Nagar, New Delhi-110029.

**3. AIMS AND OBJECTIVES:**

SAFIR aims at providing high quality capacity building and training on infrastructure regulation and related topics, in South Asia. The specific objectives of SAFIR are to:

- (i) Provide a platform for experience sharing amongst the regulators of the region;
- (ii) Facilitating effective and efficient regulation of utility and infrastructure industries;
- (iii) Initiate beneficial exchange of knowledge and expertise;
- (iv) Evolve best practices;
- (v) Build regulatory decision-making and response capacity in South Asia;
- (vi) Conduct training programs to serve regulatory agencies and other stakeholders;
- (vii) Spur research on regulatory issues;



(viii) Interact, coordinate, facilitate and engage with various International developments, regulation, financial bodies and government or private entities of various countries.

Further, it may include any objectives subsidiary and ancillary to the main aim set out above and are to be used only for the attainment of that aim and any income generated there from is to be applied for the aim only.

#### 4. SUBSCRIPTION:

4.1. The membership subscription of the association shall be payable only by the Institutional Members as under:

Institutional membership	Fee (in USD)	
Consumer Bodies/Non-Governmental Organisation (NGOs)	500	Annual
Academic/Research Institutions	2000	Annual
Regulatory Commission/Bodies of various countries in South Asia	4000	Annual
Corporate/Utilities	5000	Annual

4.2. Payment of Annual Subscriptions:

4.2.1. The annual subscription shall be payable in advance at the commencement of the financial year.

4.2.2. Subscription for membership of the Association shall be decided by the Executive Committee and in case of revision of fee, the same shall be effective after it is approved in Steering Committee, from time to time.

4.2.3. The Steering Committee may in its discretion relax the condition of mode and the time of payment in any particular case.

#### 5. INCOME AND ASSETS:



- (i) The properties and funds of SAFIR shall be held subject to the directions of the Executive Committee given from time to time, and their application and disposal shall be under the general supervision of the Steering Committee.
- (ii) All the income and assets, both movable and immovable, of SAFIR shall be utilized by SAFIR only for the promotion and achievement of its aim and objects as set out in this Memorandum of Association and no portion thereof shall be paid directly or indirectly by way of dividend, bonus, profit or in any other manner to any present or past or future member of SAFIR or to any person claiming through any one or more of them.
- (iii) All immovable and moveable properties of SAFIR and all funds created by the Executive Committee for any purpose shall be held by and in the name of SAFIR and shall be deemed to be vested in SAFIR.
- (iv) An office-bearer or member of SAFIR may be allowed remuneration for services rendered by him/her to SAFIR as may be considered reasonable.

## **6. ACCOUNTS & AUDIT AND OTHER APPOINTMENTS;**

- (i) The accounts of SAFIR shall be audited every year by an Auditor appointed by the Chairperson of CERC (Member of SAFIR). The auditors' report shall be placed before the Members during the Annual General Meeting/ Steering Committee.
- (ii) Any vacancy in the office of Auditor occurring during the year will be filled in by the Chairperson of CERC (Member of SAFIR).
- (iii) The appointment of Tax Consultant in SAFIR for filing its Income Tax Return, Goods & Service Tax Returns (GST), FCRA Returns, conducting Tax Audit (if applicable) and for appearing before the Income Tax and GST Authorities (if required), shall be appointed by the Chairperson of CERC (Member of SAFIR).
- (iv) The aforesaid appointments will be for a maximum period of 3 (three) years.

## **7. INDEMNITY:**

Every office bearer for the time being of SAFIR shall be indemnified out of the funds of SAFIR against all losses and expenses incurred in the discharge of his / her duties.



## 8. MANAGEMENT AND ADMINISTRATION

### (i) Steering Committee

The SAFIR initiative shall be guided by a Steering Committee. The “Steering Committee” shall comprise of representatives from regulatory bodies, corporate/utilities, consumer bodies/Non-Governmental Organizations and Academic/Research institution from the South Asian region provided that such representative shall be not below the level of a member or equivalent of the respective regulatory body or Board level member of the respective corporate/utility or Governing Body member of the respective consumer body/ Non-Governmental Organization/Academic/Research institution, as the case may be.

### (ii) Executive Committee.

The Executive Committee of SAFIR shall have the responsibility for operationalising the strategic direction(s) provided by the SAFIR Steering Committee. The members of the Executive Committee will be from the South Asian region not below the level of Chairperson or Chief Executive Officer or Director or Head of the Body/Organization. The members of Executive Committee of SAFIR shall be entitled to be invited to and to vote at any meeting of the Steering Committee on any question touching the properties and funds of SAFIR.

The names, addresses, and designations of the members of SAFIR, who shall undertake the formation of SAFIR based on the mandate of the Steering Committee, are as under:

COUNTRY	NAME OF THE ORGANISATION	ADDRESS	NAME OF AUTHORISED PERSON & DESIGNATION
Nepal	Water Supply Tariff Fixation Commission of Nepal	41-Aaloknagar Marg, Minbhawan Kathmandu-10,Nepal	Mr. B.K. Mansingh, Chairperson
India	Central Electricity Regulatory Commission	3 <sup>rd</sup> and 4 <sup>th</sup> Floor, Chanderlok Building,36,Janpath, New Delhi - 110001	Dr. Pramod Deo, Chairperson



## **9. BOOKS OF SAFIR TO BE THE SAFIR'S PROPERTY:**

All books, files, etc. maintained by the SAFIR Secretariat shall be the property of SAFIR and will be kept as a record (in physical form for a maximum period of 6 (six) years, previous years).

## **10. RULES AND REGULATIONS**

- (i) Primacy shall always be accorded to mechanism within SAARC over those created under SAFIR if any clash occurs.
- (ii) The affairs of SAFIR shall be governed by the Rules and Regulations **annexed** herewith.
- (iii) Notwithstanding anything contained in the Rules and Regulations, if there is any conflict between any provision of the Memorandum of Association and that of the Rules and Regulations, the Memorandum of Association and the Rules and Regulations shall be read harmoniously to remove such a conflict, and if still there is any conflict the provisions of the Memorandum of Association shall prevail.

## **11. NOTICES:**

- (i) Each member of SAFIR shall communicate from time to time to the Secretariat the address to which notices addressed to it may be sent, and all notices sent to such address shall be considered delivered.
- (ii) The Secretariat of SAFIR shall send notice of the Annual General Meeting or Extraordinary Meeting in accordance with the rules laid down hereunder.

## **12. BANK ACCOUNT:**

- (i) The bank account or accounts of SAFIR will stand in the name of "South Asia Forum for Infrastructure Regulation" or in such name as SAFIR may hereafter bear.
- (ii) All cheques drawn on behalf of SAFIR shall be signed by any two office-bearers duly authorized by the Chairperson of CERC (Member of SAFIR).



- (iii) However, if two office-bearers are not available to sign the cheques, then by two such other office bearers of the Secretariat who are so authorized by the Chairperson of CERC (Member of SAFIR).

### 13. USE OF CORPUS IN CASE OF DISSOLUTION

At any time, if it is found that the affairs of SAFIR cannot be carried on, either because it has survived its usefulness, or because sufficient support is not forthcoming or for any other reason, the Steering Committee may wind up SAFIR. Provided that SAFIR shall not be wound up save by a clear majority of two-thirds of the members of its Steering Committee present and voting at an Extraordinary General Meeting. Should it be decided to wind up as aforesaid, its property shall not be paid to or distributed among its members, but shall be given to some other body having objects similar to SAFIR or to any charitable society to be determined by the votes of not less than three-fifths of the members of the Steering Committee present at a meeting called for that purpose.

THEREFORE, WE, the undersigned, having the mandate of the Steering Committee are desirous of forming an Association in pursuance of this Memorandum of Association-

Serial No.	Name of the Organisation	Signatures in full	Name of Authorised Person & Designation	Address, designation	Full seal with signatures of witness.
1.	Water Supply Tariff Fixation Commission of Nepal		Mr. B.K. Mansingh, Chairperson	41-Aaloknagar Marg, Minbhawan Kathmandu-10,Nepal	
2.	Central Electricity Regulatory Commission		Dr. Pramod Deo, Chairperson	3 <sup>rd</sup> and 4 <sup>th</sup> Floor, Chanderlok Building, 36,Janpath, New Delhi - 110001	



## **ANNEXURE 1: RULES AND REGULATIONS**

### **1. GENERAL**

#### **1.1. Name:**

The name of the Association shall be “South Asia Forum for Infrastructure Regulation” (hereinafter referred to as “SAFIR” or the “Association”). SAFIR is an “Association of Persons” committed to a common aim and Objective(s) of directing all energies and efforts towards building a strong expertise in infrastructure regulation. The Association is not intended to form any partnership or trust for any purpose whatsoever.

#### **1.2. Background:**

The South Asia Forum for Infrastructure Regulation (SAFIR) was formed in May 1999. SAFIR aims to provide high quality capacity building and training on infrastructure regulation, and related topics, in South Asia and to stimulate research on the subject by building a network of regional and international institutions and individuals that are active in the field. It also aims at facilitating effective and efficient regulation of utility and infrastructure industries, initiate beneficial exchange of knowledge and expertise, and set the trend of rapid implementation of global best practices.

#### **1.3. Office:**

The Secretariat of SAFIR shall be located at such place as may be decided by the Steering Committee from time to time.

#### **1.4. Aims and objectives:**

SAFIR aims to provide high quality capacity building and training on infrastructure regulation and related topics in South Asia. Specific objectives of SAFIR are to:

- 1.4.1. Provide a platform for experience sharing amongst the regulators of the region;
- 1.4.2. Facilitating effective and efficient regulation of utility and infrastructure industries;
- 1.4.3. Initiate beneficial exchange of knowledge and expertise;



- 1.4.4. Evolve best practices;
- 1.4.5. Build regulatory decision-making and response capacity in South Asia;
- 1.4.6. Conduct training programs to serve regulatory agencies and other stakeholders;
- 1.4.7. Spur research on regulatory issues;
- 1.4.8. Interact, coordinate, facilitate, and engage with individuals, various International development, and regulatory, financial bodies like World Bank, government or private entities of various countries.

**1.5. Ancillary or incidental objectives:**

- 1.5.1. Provide a databank of information relating to regulatory reform processes and experiences;
- 1.5.2. To make, amend, rescind or add the rules and regulations for the conduct of affairs of the Association.
- 1.5.3. To promote, support, affiliate, amalgamate or merge with any other body or institution having partially or wholly similar aim or objective.
- 1.5.4. To prepare and print public papers, periodicals, monographs and books, in furtherance of the objectives of the Association.

## **2. STRUCTURE**

**2.1. The structure of SAFIR shall comprise of:**

- a. Chairperson**
- b. Steering Committee**
- c. Executive Committee**
- d. Secretariat**
- e. Treasurer**



## **2.2 Chairperson**

The Chairperson of SAFIR shall hold the office in ex-officio capacity. SAFIR shall elect on rotation basis (among the Countries represented in SAFIR) a Chairperson from its present members representing regulatory bodies and shall hold the office for a term of 2 (two) years in continuation.

## **3. Steering Committee**

**3.1. Members:** The Steering Committee of SAFIR shall comprise of all the members inducted from time to time into the Association. The following shall be eligible to be the members of SAFIR.

### **(a) Regulatory Bodies**

The Infrastructure Regulatory Commissions/ Bodies of various countries in South Asia shall be eligible to join as the members of SAFIR. Each such Regulatory Commission/body may nominate one person to the Steering Committee provided that such person shall be not below the level of member or equivalent of the respective Regulatory Commission/body.

### **(b) Corporates/Utilities**

Co-operative Societies, Corporate Bodies, Infrastructure Service Providers and/or organizations in South Asia, involved in or incidental to the functioning of the Association may be admitted as members of SAFIR. Each such Corporate/Utility may nominate one person to the Steering Committee provided that such person shall be not below the level of Board member or equivalent of the respective Corporate/Utility.

### **(c) Consumer Bodies/Non-Governmental Organizations (NGOs)**

Consumer advocacy groups, consumer organizations, and/or Non-Governmental Organizations (NGOs) in South Asia, involved in or incidental to the functioning of the Association may be admitted as members of SAFIR. Each such Consumer Body/ Non-Governmental Organization may nominate one person to the Steering Committee provided that such person shall be not below the level of Governing Body member or equivalent of the respective Consumer Body/ Non-Governmental Organization.



(d) **Academic Institutions**

Technical, professional, research or academic institute, survey conducting or statistics collecting bodies or other educational or training bodies in South Asia, may be admitted as members of SAFIR. Each such institution may nominate one person to the Steering Committee provided that such person shall be not below the level of Governing Body member or equivalent of the respective academic or research institution.

**3.2. Duties, Powers and Functions of the Steering Committee**

3.2.1. The duties of the Members shall be as follows:

3.2.1.1. Members are expected to actively involve themselves in achieving the aim and objectives of the Association.

3.2.1.2. Members shall bring matters of importance to the notice of the Chairperson, Steering Committee and other members for consideration from time to time.

3.2.1.3. Members shall suggest ways, methods and practices and benchmarks which may be followed to accelerate the achievement of the aim and objectives of the Association.

3.3. The Liability of the Members of the association shall be as follows:

3.3.1. The liability of the members of the Association shall be limited.

3.3.2. Member shall not be liable personally for any expenditure or liability of the Association or any loss of the Association's income or assets, unless he/she is guilty of fraud or gross negligence;

3.3.3. No member shall be liable for the personal acts of another member.

3.4. **Functions:** The Steering Committee shall be guided by the SAFIR objectives. The Steering Committee shall be the body responsible for taking all strategic decisions pertaining to functions of SAFIR.

3.5. **Term of the Steering Committee:**

3.5.1. Members of the Steering Committee shall hold office so long as they pay the subscription regularly.

3.6. **Meeting of the Steering Committee**



- 3.6.1. The Steering Committee of (SAFIR) shall ordinarily meet at least once in year as part of the AGM and/or as may be expedient for achieving the objectives of SAFIR.
- 3.6.2. The Rules and Regulations in regard with notice, place and procedure for the Meeting of the Extraordinary General Meeting (EGM) shall apply mutatis mutandis to a meeting of the Steering Committee.
- 3.6.3. 1/3 (one third) of the members will form the quorum of the Steering Committee. If within 30 minutes from time appointed for the meeting, no quorum is present at any meeting of the Committee, the meeting shall be adjourned. The adjourned meeting may be reconvened at the discretion of the Chairperson and no quorum shall be necessary in that meeting and the members present may transact the business for which the meeting was called.

#### **4. Executive Committee**

- 4.1. **Members:** The Executive Committee shall comprise of members of the Steering Committee representing regulatory bodies from South Asia. Each member Country of SAFIR will be represented in the Executive Committee by one member from a regulatory body. If a member Country has more than one regulatory body as member of SAFIR, such members will decide amongst themselves a representative who would be the representative in the Executive Committee. Chairperson of SAFIR shall be the ex-officio Chairperson of the Executive Committee.
- 4.2. **Function:** The Executive Committee of SAFIR shall have the responsibility for operationalizing the strategic direction provided by the SAFIR Steering Committee.
- 4.3. **Term of the Executive Committee:**
  - 4.3.1. The members of the Steering Committee shall nominate the members of the Executive Committee. The said members may hold the membership of the Executive Committee in their ex-officio capacity.
  - 4.3.2. Members of the Executive Committee shall hold office so long as they remain as a member of the Steering Committee and pay the subscription regularly.



#### **4.4. Meeting of the Executive Committee**

- 4.4.1. The Executive Committee shall ordinarily meet back to back with the meeting of the Steering Committee and/or as may be expedient for achieving the objectives of SAFIR.
- 4.4.2. The notice for a meeting of the Steering Committee of SAFIR shall be deemed to be the notice for the meeting of the Executive Committee. Additionally, the Rules and Regulations in regard with notice, place and procedure for the Meeting of the EGM shall apply mutatis mutandis to a meeting of the Executive Committee being held independently of a Steering Committee meeting.
- 4.4.3. 1/3 (one third) of the members will form the quorum of the Executive Committee. If within 30 minutes from the time appointed for the meeting, no quorum is present at any meeting of the Committee, the meeting shall be adjourned. The adjourned meeting may be reconvened at the discretion of the Chairperson and no quorum shall be necessary in that meeting and the members present may transact the business for which the meeting was called.

#### **5. SECRETARIAT**

- 5.1. One of the members of the Steering Committee shall be entrusted with the responsibility of operating the Secretariat of SAFIR for such period as may be decided by the Steering Committee. The executive head of such member (regulatory commission/body) shall be the ex-officio Chairperson of the Secretariat and shall be entitled to commission the staff of the Secretariat.

#### **5.2. Powers and Functions**

- 5.2.1. The Secretariat shall be responsible for inducting new members in SAFIR, subject to placing any such new membership before the Steering Committee subsequent to such induction.
- 5.2.2. The Secretariat shall be responsible for examining new applications for membership to SAFIR and for taking decision thereon subject to ex-post facto approval of the Steering Committee.



- 5.2.3. The Secretariat shall be responsible for soliciting new applications for membership to SAFIR and for taking decision thereon subject to ex-post facto approval of the Steering Committee.
- 5.2.4. Secretariat shall be responsible to accept from all the members of SAFIR, such amounts as Subscription Fee for such term, as may be prescribed from time to time by the Executive Committee under authorization of the Steering Committee.
- 5.2.5. The Chairperson of the Secretariat shall approve rejoining of any such member who has either voluntarily left SAFIR or has been removed from SAFIR by reason of defaulting in payment of the Subscription subject to payment of the Renewal Subscription Fee as may be prescribed from time to time.
- 5.2.6. The Secretariat shall keep a roll of members with address. If a member of the Association changes its address, it shall notify such change to the Secretariat and the entry in the roll shall be changed accordingly. If such member fails to notify such change, the address in the rolls of the Association shall be deemed to be the correct address.
- 5.2.7. The Secretariat shall keep separate books of accounts in accordance with the applicable statutory provisions and accounting principles at its office reflecting all sums of money received and expended by the Association and the matters in respect of which the receipt and expenditure takes place including paying of wages and salaries of employees
- 5.2.8. The accounts of SAFIR shall be audited every year by an Auditor appointed by the Chairperson CERC (Member of SAFIR). The Auditors' Report, together with the remarks, if any, of the Secretariat thereon shall be placed before the next Annual General Meeting before all the members of SAFIR.
- 5.2.9. The Secretariat shall issue any Notice/ Notice of AGM/EGM/meeting of the Association to all members of SAFIR Steering Committee or Executive Committee, as the case may be.
- 5.2.10. The Secretariat shall determine the time and place of AGM/EGM after consultation with the Chairperson of SAFIR.



5.2.11. Every notice of AGM / EGM of the Association shall specify the time and place of the meeting and contain a statement of the business to be transacted thereat.

5.2.12. Any inadvertent omission to give notice or non-receipt of notice by any member shall not invalidate the proceedings of the meeting.

## **6. ANNUAL GENERAL MEETING**

6.1. SAFIR shall hold an annual general meeting (hereinafter referred to “AGM”) in the form of an annual “**SAFIR Conference**”.

6.2. A notice of at least 21 (Twenty-One) days in advance shall be given to the members of SAFIR. The notice shall contain the agenda for discussion and action at the AGM.

6.3. The venue of the meeting shall be subject to rotation each year unless it is decided to hold it at any other place with the express approval of Steering Committee or the approval of a simple majority of the members present and voting at the preceding AGM.

6.4. The Chairperson of the Association shall preside over the AGM. If, the Chairperson is not present, members present shall elect one person from amongst themselves to chair the meeting.

6.5. The presence of 1/3 (one third) of the Members shall form the quorum. If within 30 minutes from time appointed for the meeting, no quorum is present at any meeting the same shall be adjourned. The adjourned meeting may be reconvened at the discretion of the Chairperson and no quorum shall be necessary in that meeting and the members present may transact the agenda or issue for which the meeting was called.

6.6. The AGM shall transact the following business, namely: -

6.6.1. to report to the Chairperson and members of the affairs of the Association;

6.6.2. to adopt the audited income and expenditure account of the association;

6.6.3. to determine the time and place of the next AGM; and

6.6.4. to consider any other matter that may be given notice of by any member or brought forward at the meeting with the permission of the Chair.

## **7. EXTRAORDINARY GENERAL MEETING (EGM)**

7.1. All meetings of the Association other than AGM shall be called Extraordinary General Meetings.



- 7.2. An Extraordinary General Meeting may be convened by the Chairperson of SAFIR through the Secretariat to consider specific matters of urgency and importance.
- 7.3. EGM may be called only after giving not less than 10 (ten) days' notice in writing to all members.
- 7.4. An Extraordinary General Meeting may also be convened on submission of a written requisition in this behalf to the Executive Committee by not less than 5 (five) members to consider specific issues.
- 7.5. The Chairperson of SAFIR shall preside over the EGM. If, the Chairperson is not present, members present shall elect one person from amongst themselves to chair the meeting.
- 7.6. The presence of 1/3 (one third) of the Members shall form the quorum. If within 30 minutes from the time appointed for the meeting, no quorum is present at any meeting the same shall be adjourned. The adjourned meeting may be reconvened at the discretion of the Chairperson and no quorum shall be necessary in that meeting and the members present may transact the agenda or issue for which the meeting was called.
- 7.7. The EGM shall transact the limited business on its agenda as specifically mentioned in the notice to the EGM.

## **8. VOTING AT AGM/EGM**

- 8.1. Each member represented in the Steering Committee shall be entitled to one vote at any meeting of the AGM/EGM.
- 8.2. Each eligible member shall be entitled to appoint a proxy to attend a meeting of the SAFIR and vote on its behalf.
- 8.3. All matters in the meeting shall be decided by a simple majority of the members present and voting. In case voting is required each member of the Steering Committee has one vote and in the event of a tie, the Chairperson shall have a second or casting vote.
- 8.4. The member appointed by Secretariat shall record the minutes of the meetings of the Association in a Minutes Book to be maintained for the purpose and obtain the signature of the Chairperson in token of its correctness as early as



possible after the meeting, and in any case, within a month of the date of the meeting or otherwise the minutes of the meeting shall be considered void.

## **9. RESIGNATION, WITHDRAWAL OR EXPULSION/CESSATION OF MEMBER**

9.1. A member of SAFIR shall cease to be a member:

9.1.1. upon being so removed by the Steering Committee acting on the recommendation of the Chairperson of the Secretariat for non-observance of the rules and regulations laid herein, after having given an opportunity to show cause to the member. The decision of the Steering Committee shall be final and binding in this regard.

9.1.2. upon voluntarily withdrawal from membership of SAFIR by making an application in the regard to the Chairperson of the Secretariat.

9.1.3. upon non-renewal of subscription for a consecutive 2 (two) terms.

## **10. APPEALS AND RE-ADMISSATION OF MEMBERS:**

10.1. A Commission/Body who has ceased to be a member of the Association by virtue of provision of Rule 9 herein before, may appeal within 30 days of such cessation to the Steering Committee who may re-admit the said Commission/Body as a Member subject to such conditions as may be specified.

10.2. A defaulter member who has not paid the membership subscription by virtue of provision of Rules 9.1.3. can re-join the Association by paying the membership fees for the last 2 (two) years.

## **11. FUNDS AND DONATION ETC.**

11.1. SAFIR may receive gift, grants, donations and benefactions from any individual, corporate body, association, trust, Bank, or any other statutory or regulatory or financial body, Government or any other source in or outside India and the same shall be used by the association for exercising its objects and discharging its aim subject to the condition that any acceptance from foreign agencies, institutions and Government will be on such terms as may be prescribed by statues or law for the time being in force. This includes:



11.1.1. A Corpus fund of (amount) may be created with contribution from various members, individual, corporate body, Association, trust, Bank, or any other statutory or regulatory or financial body, Government or any other source in or outside India.

11.1.2. All other sums of money that may be provided by the Governments.

11.1.3. All subscription & charges received from the members.

11.1.4. All sums of money generated by way of grants and donations or any other manner or from any other sources.

11.1.5. All other sums of money credited to the said fund subject to the tax and foreign currency transactions related statutes and regulations, for the time being in force

## 12. UTILIZATION OF THE FUNDS

12.1. All the funds of the SAFIR shall be deposited, utilized or invested by the Secretariat under the general supervision of the Executive Committee as allowed under various applicable tax statutes and rules in force for the time being.

12.2. All the income and movable and immovable assets of the Association shall be utilized and applied solely for the promotion and achievement of its aim and objectives as set forth in the Memorandum of Association.

12.3. No portion of the income or assets of the Association shall be paid or transferred directly or indirectly by way of dividend, bonus and profit or in any other manner to the present or past members of the Association or to any person claiming through any one or more of them.

12.4. No member of the Association may make any profit or derive any pecuniary benefit by virtue of his membership of SAFIR. However, a member may be reimbursed any out-of-pocket expenses incurred by him in connection with the work of the Association.

12.5. Notwithstanding anything contained hereinabove, any member of SAFIR may be allowed by the Steering Committee, on a recommendation made by the Secretariat, a remuneration for services rendered by him to the Association as may be considered reasonable in the circumstances of the case.



**13. CONTRACT AND AGREEMENTS**

- 13.1. The Steering Committee may enter into any arrangements with any government or authority, supreme, municipal, local or otherwise, or company that may seem conducive to the Association's main object(s), and to obtain from any such government authority or company, any charters, contracts, decrees, rights, privileges and concessions and to carry out, exercise and comply with any such arrangements, charters, contracts, decrees, rights, privileges and concessions.
- 13.2. The Executive Committee or anybody of persons or person designated by the Executive Committee may enter into any lease, license, hire purchase agreement with respect to any immovable or immovable property or service
- 13.3.** The Secretariat may enter into contract, agreements of employment with any individuals or contractor or recruitment agency, head hunting agency, employment exchange or any other body for employment of any person for any designation or post in SAFIR.

**14. LEGAL PERSONALITY**

The Association may sue or be sued in the name of the Chairperson as per provision laid down under statutes or rules applicable and for the time being in force in the respective country in which cause of action has arisen to the Association.

**15. INDEMNITY**

Every office bearer (including the Chairperson) for the time being of SAFIR shall be indemnified out of the funds of SAFIR against all losses and expenses incurred in the discharge of his / her duties.

**16. BOOKS OF SAFIR TO BE THE SAFIR'S PROPERTY**

All books, files, etc. maintained by the Secretariat shall be the property of the Association and shall be kept as a record at the Secretariat.

**17. BANK ACCOUNT:**

- 17.1. The bank account or accounts of SAFIR shall stand in the name of "South Asia Forum for Infrastructure Regulation" or in such name as SAFIR may hereafter bear.



- 17.2 All cheques drawn on behalf of SAFIR shall be signed by any two office-bearers duly authorized by the Chairperson of CERC (Member of SAFIR).
- 17.1. However, if two duly authorized office-bearers are not available to sign on the cheques, then a cheque may be signed by two such other office bearers of the Secretariat who may be authorized from time-to-time by the Chairperson of CERC (**Member of SAFIR**).

18. **DISSOLUTION**

- 18.1. The Association may be dissolved upon unanimous decision of the Steering Committee in the EGM or upon a decision of 2/3rd majority of the Steering Committee and in compliance with the law and procedure for the time being in force.
- 18.2. If on holding up or dissolution of the Association there shall remain, after satisfaction of all debts and liabilities, any assets or property, they shall be dealt with in such manner as the law of the respective country may determine.
- 18.3. At the end of the “term” of office, the Association shall report to the concerned statutory authority in this regard and shall comply with all legal formalities and reporting requirements including but not limited to the following, and obtain the following:
- i. Tax clearance certificate from the Statutory/Regulatory authority/body in this regard whether at state or central level;
  - ii. Auditor’s Certificate confirming that all liabilities accruing to the Association by event of its operation have been either fully paid or adequately provided for;
  - iii. Certificate to the effect that no legal proceedings pending in any court /judicial/ statutory authority against the Association.
- 18.4. At the end of the “term” of office in the member Country, the Assets, deposits/ bank balances etc, shall be remitted to a new office of the association member country in compliance with central or state or international law in force for the time being.



19.

**USE OF CORPUS IN CASE OF DISSOLUTION**

At any time, if it is found that the affairs of SAFIR cannot be carried on, either because it has survived its usefulness, or because sufficient support is not forthcoming or for any other reason, the Steering Committee may wind up SAFIR. Provided that SAFIR shall not be wound up save by a clear majority of two-thirds of the members of its Steering Committee present and voting at a Extraordinary General Meeting. Should it be decided to wind up as aforesaid, its property shall not be paid to or distributed among its members, but shall be given to some other body having objects similar to SAFIR or to any charitable society to be determined by the votes of not less than three-fifths of the members of the Steering Committee present at a meeting called for that purpose.

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**South Asia Regional Energy Partnership (SAREP)  
Presentation**

on

**Common Minimum Grid Code (CMGC) for  
South Asia**

**27<sup>th</sup> SAFIR Executive Committee Meeting & 30<sup>th</sup> SAFIR Steering Committee Meeting**

**12<sup>th</sup> December, 2024, New Delhi, India**

Presented by

**Shri Pankaj Batra, Senior Adviser, SAREP & Shri Rajiv<sup>31</sup> Ratna Panda, Regional Energy Trade Lead, SAREP**

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- 4. Connection Code*
- 5. Operation Code*
- 6. Scheduling and Dispatch Code*
- 7. Administration of the Code*

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# Progress on Common Minimum Grid Code (CMGC) for South Asia

## Consultative and Participative Processes



Through Extensive Deliberation and Consultation (*Over a period of four years and 7 JWG Meetings*) CMGC has been *Finalized and adopted* with the changes during the 10th meeting JWG held on 8th January 2024.



In addition, several One-to-one Meeting were undertaken with SAFIR Member Countries



*Builds upon the earlier study work* done on Harmonisation of Grid codes, Operating Procedures and Standards to facilitate/promote Cross-Border Electricity Trade in the South Asia Region.



The CMGC is now is placed before this August Body - SAFIR ECM and SCM for its consideration.

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## PREAMBLE

The Common Minimum Grid Code for South Asia lays down the common minimum rules, guidelines and standards to be followed by various South Asia country participants in the system *for cross border trading in electricity, while operating the power system, in the most secure, reliable, economic and efficient manner.*

# Common Minimum Grid Code (CMGC) for South Asia



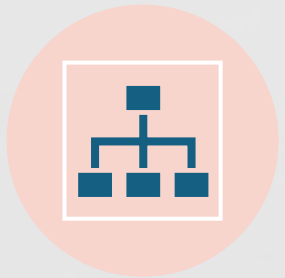
## Objective

- a) **Facilitation of Cross Border Trading Of Power**, in a **Fair and Non-discriminatory Manner** for all South Asian nations, while ensuring **Secure, Reliable, Economic and Efficient** planning and operation of the grid.
- b) Facilitation of the **Coordinated Optimal Operation of the South Asian Grid.**
- c) Facilitation of **Coordinated and Optimal** maintenance **planning of generation and transmission facilities** in the South Asian grid.

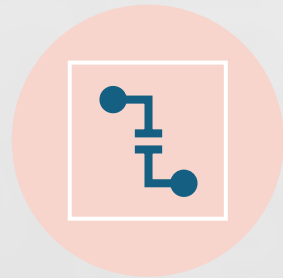
# Common Minimum Grid Code (CMGC) for South Asia

## Structure of CMGC

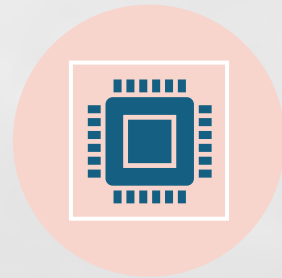
The structure of the Common Minimum Grid Code for South Asia consists of the following



PLANNING CODE



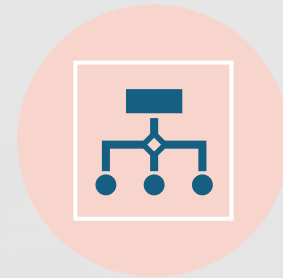
CONNECTION  
CODE



OPERATING CODE



SCHEDULING AND  
DESPATCH CODE  
AND



ADMINISTRATION  
OF THE GRID  
CODE

# Common Minimum Grid Code (CMGC) for South Asia

## Planning Code



### Objective

- a) To specify the principles, procedures and criteria which shall be used in the planning and development of the cross-border transmission system.
- b) To promote co-ordination amongst the transmission utilities planning entities of the South Asian countries.
- c) The planning criteria basically ensures the reliability of the cross border transmission system. The cross-border transmission system shall be capable of withstanding the loss of most severe single system infeed without loss of stability.

# Common Minimum Grid Code (CMGC) for South Asia

## Connection Code



### Objective:

- a) To ensure the safe operation, integrity and reliability of the connected South Asia grid.
- b) Any country in South Asia intending to new country getting connected to the South Asia grid shall neither suffer unacceptable effects due to its connectivity nor impose unacceptable effects on the South Asian grid.
- c) Any country in South Asia new country seeking connection to the South Asia grid is required to be aware, in advance, of the requirements for connectivity to the South Asian grid and also the standards and conditions its system has to meet for being integrated into the grid.
- d) It lists out the important Technical Requirements for Connectivity to the Grid.
- e) A Connection Agreement is envisaged between the SAFTU and the national transmission utility of the country seeking connection.

# **Common Minimum Grid Code (CMGC) for South Asia**

## **Operation Code**

- a) The objective of this Code is to maintain operation security.**
- b) This Code lists out the important operational parameters, and processes and procedures, required to be maintained/followed, for safe and secure operation of the interconnected grid, like frequency, voltage, protection coordination, operation liaison, system restoration procedure, etc.**
- c) This also consists of outage coordination, and reporting system.**
- d) All country system operators are to abide by these.**

# **Common Minimum Grid Code (CMGC) for South Asia**

## **Scheduling and Dispatch Code**

**This code deals with the procedures to be adopted for scheduling of the net injection/drawals of concerned country entities on a day ahead basis with the modality of the flow of information between the South Asia Forum of System Operators (SAFSO) / country system operators / Power Exchange.**

# Common Minimum Grid Code (CMGC) for South Asia

## Administration of the grid code

- a) **Initially, the Committee of the single points of contact for each country would shall be responsible for administration and modification of the Common Minimum Grid Code for South Asia.**
- b) **Later this would shall be replaced by the South Asia Forum of Electricity Regulators.**
- c) **The Committee may meet at regular intervals or as needed for the purpose of administration and modification of the Common Minimum Grid Code for South Asia.**

# Thank You



“

Change is inevitable, but  
transformation is a choice.

HEATHER ASH AMARA

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“It always seems  
impossible until  
it's done.”

- Nelson Mandela

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# The Electricity Market of South Asia

Market Design Recommendation | Governance Framework | Development Pathway

SAFIR's 27<sup>th</sup> Executive Committee Meeting (ECM)  
and 30<sup>th</sup> Steering Committee meeting (SCM)  
December 12 2024

# Learning from international emphasizes the need for Hard Infra and gradual evolution of the soft infra development with adaptive institutional and governance frameworks

Regional Power Pool/Market	# of countries/ states	Main governance framework
European Electricity Market	8 (1951, UCPTE); 24 (1999, UCTE) 35(2009 onwards, ENTSO-e)	Regional bodies empowered by European Union Directives to coordinate regional operations with decentralized dispatch: European Union Directive 96 / 92 towards common rules for the internal market in electricity; Security Package to enforce multilateral agreement; 3rd Energy Package
South African Power Pool (SAPP)	16	A regional body with clear functions formulated under Inter-Governmental Memorandum of Understanding (IGMOU) that grants its mandate to facilitate power trade among countries via Inter-Utility MOU
Eastern African Power Pool (EAPP)	14	A regional body with clear functions formulated under Inter-Governmental Memorandum of Understanding (IGMOU) that grants its mandate to facilitate power trade among countries via Inter-Utility MOU
Pan-Arab Electricity Market (PAEM)	18 of which 16 signed the MOU in 2017	An Electricity Ministerial Council empowered to approve the regional governance documents (MOU, Legal Agreement, Commercial Agreement, Technical rules)
SIEPAC	6	A Framework Treaty established the Regional Electricity Market (REM), the creation of the SIEPAC line, and the regional organisations part of REM, which include Regional Operations Entity (EPR), the Regional Operating Entity (EOR), the Regional Commission for Electrical Interconnections (CRIE) and the Board of Directors of the Regional Electricity Market (CDMER)
Western Energy Imbalance Market (WEIM)	11 US states	The Western Energy Imbalance Market (WEIM) is governed by a five member body with shared authority from the ISO Board of Governors on rules specific to participation to the WEIM. Designed by regional stakeholders, members of the governing body are nominated by a committee of western stakeholders.
PJM	13 US states plus the District of Columbia	PJM is a membership organization, providing services on a non-profit basis to customers that are members of PJM. The corporate structure works through the interaction of the PJM Board of Managers, member organizations and stakeholders. The PJM Board of Managers works in conjunction with the Members Committee.

**Starting point in South Asia :** Currently all trade is bilateral with or via India, no regional market governance or institutions exist

### Soft Infra

- **Regional Governance:** no regional market design nor defined regional legal framework- only SAARC Agreement (signed in 2014) is geared towards regional market (not operational)
- **Regional institutions:** none
- **Regional Regulatory framework & market rules:** no regulatory frameworks, commercial or technical rules
- **National enabling measures:** almost all countries silent on cross border trade but it is happening based on cross-border transmission bilateral agreements & facilitated by India's evolving cross-border electricity trade guidelines

political  
commitment  
focused on  
bilateral  
transmission  
development

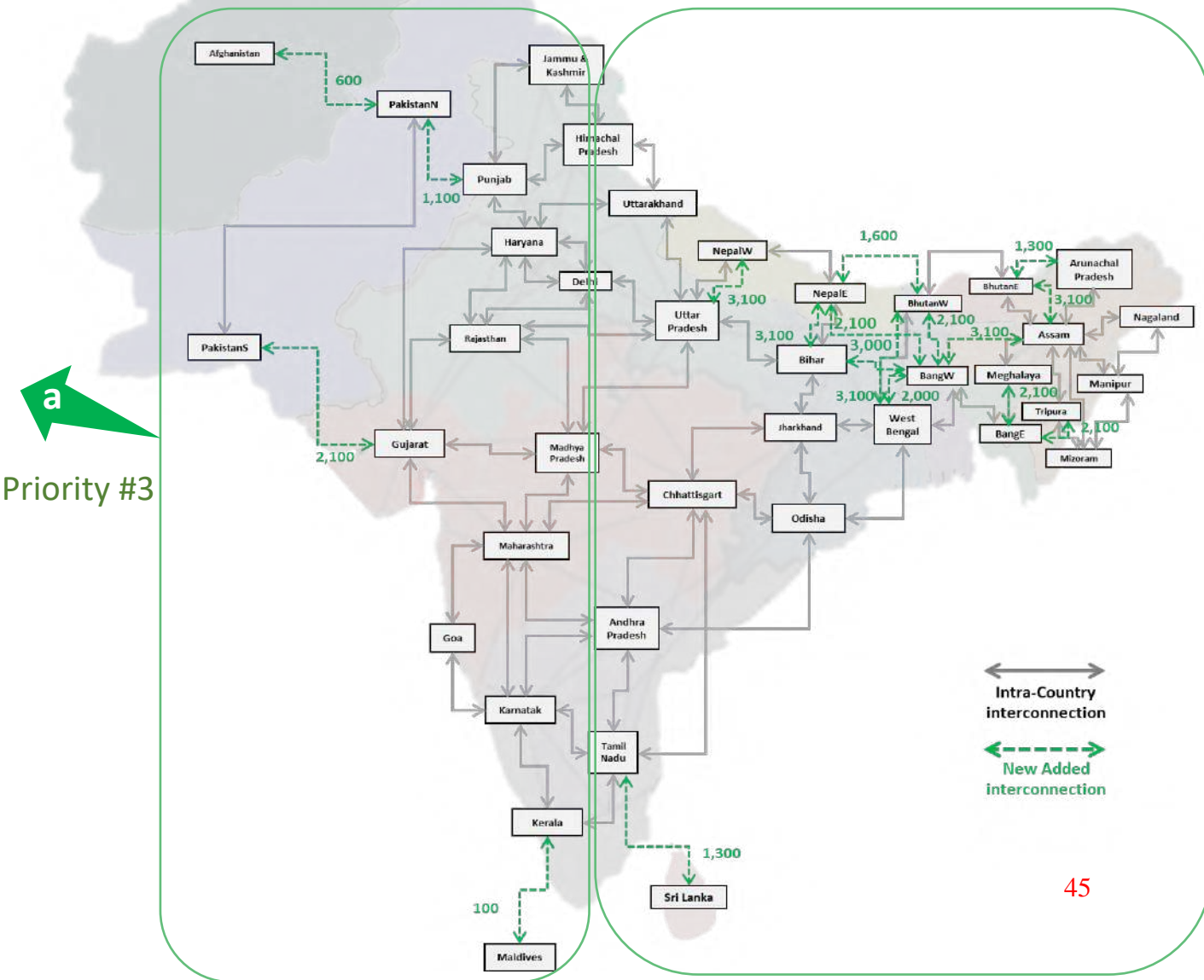
### Hard Infra (cross-border transmission)

- **G2G connectivity** level is still constrained by only connecting/operating via India's grid
- **Cross-border transmission planning:** bilateral opportunistic approach with a focus on short distance transmission network and utilizing hydro in BT & NP (in the future)
- **Coordination & execution:** incubated bilaterally by Governments & executed ministries/utilities
- **Business model:** Asset-in-country model; JV, PPP (BOT) with gradual increase in private sector role
- **Financing:** mostly public (inc. IFIs, ECAs), with commercial financing mainly on India's side
- **Trading strategies & contractual:** designed for bilateral trade & dominated by long-term PPAs

# Potential trade backbones to develop the Grid-to-Grid transmission among South Asia countries: (an initial World Bank analysis)

Priority #2: after 2030

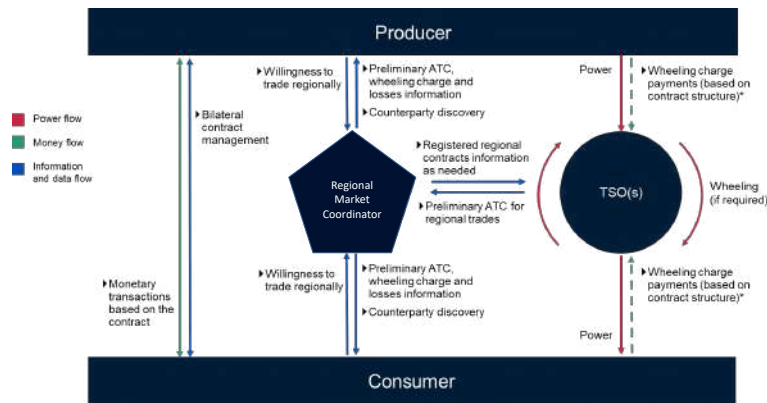
Priority #1: by 2030



Priority #3

- Backbone 1 (priority #1a):** Constellation project by 2030 for direction connections as Nepal-Bhutan, Bhutan-Bangladesh, Nepal-Bangladesh, India (Assam) - Bangladesh-India (West Bengal) capacity transfer is up to 2000MW with exception of the latter and Nepal-Bhutan at 1000MW
- Backbone 2 (priority #1b):** India-Sri Lanka by 2030, transfer capacity 1000MW
- Backbone 3 (priority #2a):** : India-Pakistan (N) in 2030-2035, transfer capacity 1000MW
- Backbone 4 (priority #2b):** : India-Maldives in 2030-2035, transfer capacity 500MW
- Backbone 5a and 5b (priority #3):** India-PAEM in 2035-2040 | South Asia - ASEAN in 2035-2040, transfer capacity of 2000-5000MW.

# Evaluated potential models for a regional market development in South Asia



## Model 1: Standardized Regional Bilateral Trading

- ▶ Standard Physical contracts
- ▶ Announcement platform (“OTC” platform)
- ▶ Coordination of preliminary ATC calculation
- ▶ Information sharing
- ▶ Central registry of regional bilateral contracts
- ▶ Facilitating approval of proposed deals among involved TSOs



## Model 2: a Secondary Regional Market

- ▶ New regional market is created that can accommodate the current non-market SA countries as well as those with established markets
- ▶ Agreed methodology to calculate and use interconnector capacity
- ▶ Harmonized Market Book of Rules
- ▶ Allows a full market coupling optimization



## Model 3: a Primary Regional Market

- ▶ One common market for South Asia
- ▶ Common rules, timelines and using the same Market Trading Platform
- ▶ One organisation that operates the market on behalf of all connected countries
- ▶ Fully harmonized platforms, rules and procedures

## Pros and cons and recommended model

	Multinational Standardized Regional Bilateral Trading	Secondary Regional Market		Multinational Regional Market
	Model 1	Model 2a Loose Coupling	Model 2b Tight Coupling	Model 3 Implicit coupling
<b>Pro</b>	<ul style="list-style-type: none"> <li>• Today's solution put into a more common framework</li> <li>• Will be easy to implement and a quick start</li> <li>• Could be part of a stepwise implementation</li> </ul>	<ul style="list-style-type: none"> <li>• Will ensure allow for independent market operators</li> <li>• Requires less harmonization</li> </ul>	<ul style="list-style-type: none"> <li>• Will allow for independency</li> <li>• Will deliver optimal cross-border flow</li> <li>• Could be based on one trading system (based on legal model)</li> <li>• Could be "end-game"</li> </ul>	<ul style="list-style-type: none"> <li>• Will deliver optimal cross-border flow</li> <li>• Will be based on one trading system</li> <li>• Will be optimal operational setup</li> <li>• Could be "end-game"</li> </ul>
<b>Con</b>	<ul style="list-style-type: none"> <li>• Will not deliver optimal flow or really a common market</li> </ul>	<ul style="list-style-type: none"> <li>• Complex solutions (require at least three trading systems)</li> <li>• Even with little harmonization, the legal setup will be complex</li> <li>• Will not ensure optimal flow and full benefit</li> </ul>	<ul style="list-style-type: none"> <li>• Will require tight operational coupling between the countries – will take time to implement and agree</li> <li>• Difference between India and the rest</li> <li>• Big step?</li> </ul>	<ul style="list-style-type: none"> <li>• Will require a fully common setup (too tight?)</li> <li>• Could mean full merging – not wanted?</li> <li>• Very hard politically</li> <li>• Too big a step?</li> </ul>

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Target model

## Recommended pathway for a regional market development in South Asia: piloting regional trading based on a transitional market design with dedicated trading platform by 2030

Build on current cross-border trades by introducing and testing **standard forms of bilateral contracts** to simplify bilateral trading

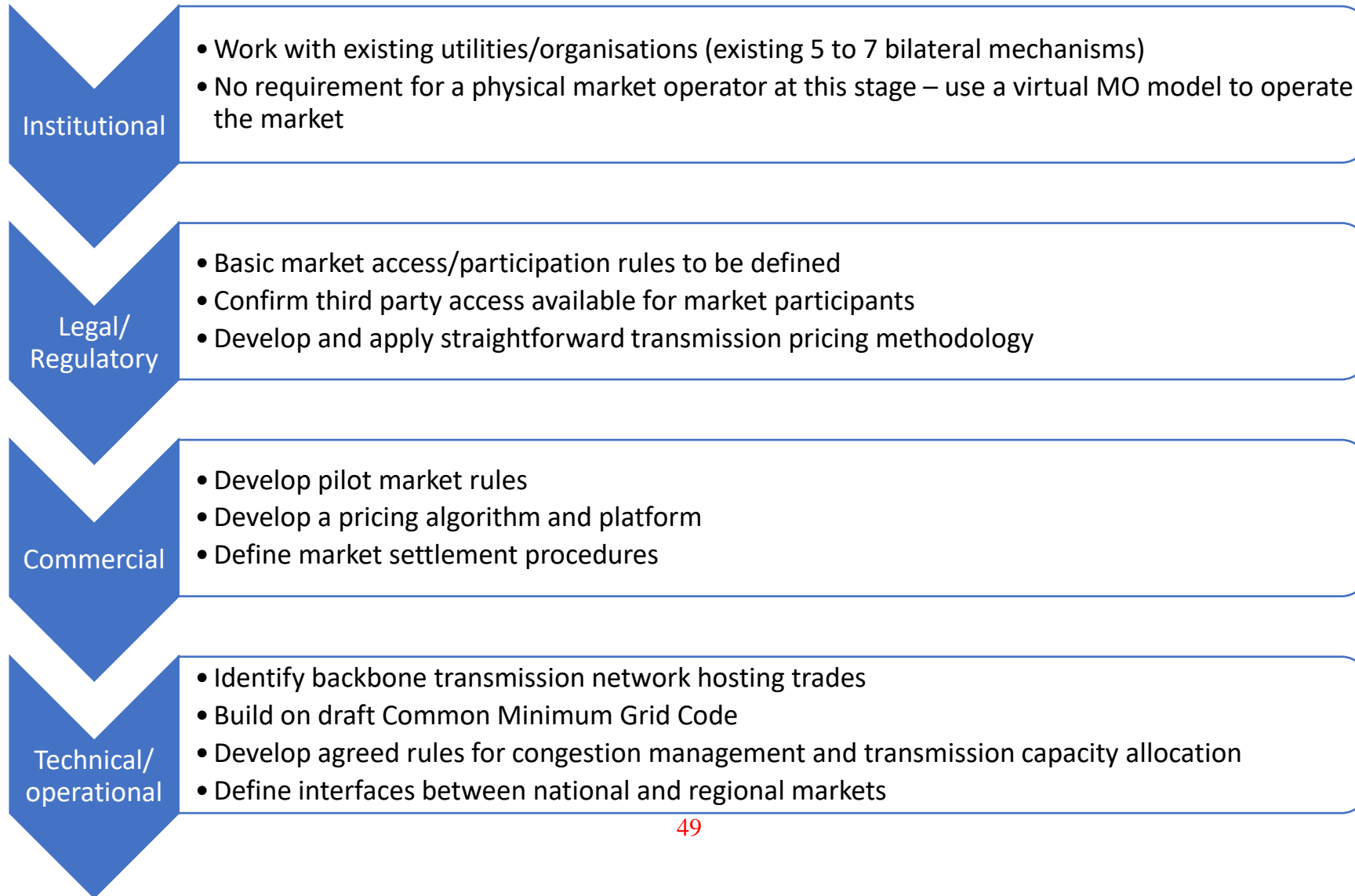
Identify and develop multi-country regional backbone transmission infrastructure to increase capacity for regional trading (**the “hard infra” approach**) e.g. Sri Lanka – India connection, new lines between Bhutan, Nepal, India and Bangladesh

Set up a Pilot Regional **Day Ahead Market** Trading platform creating opportunities for trade across regional interconnectors by interested parties

Develop market governance and organisational structures – a **Market Governance Framework Agreement is in draft**

Develop a Regional **Balancing Market** and evaluate application of SCED alongside the decentralised market model

## Key features of the transitional pilot market design on selected grid-to-grid trading backbones: The bottom-up a “hard infra” focus is recommended for regional market development in South Asia



# Key transitional tasks between steps of market development for countries that are ready for a rapid start in regional trading using existing and new cross-border lines

## Step 1: Status quo to regional bilateral trading (2023 – 2025)

### Develop a pilot market trading platform

- Facilitating trading across existing backbone network with standardised bilateral contracts
- Begin with the Day Ahead Market
- Focus on continuous capacity building
- “Light touch” institutional development
- Develop market rules and settlement processes
- Third party access regulations
- Transmission pricing rules
- SCED and other short-term mechanisms will be evaluated

The transitional Market platform

## Step 2: Pilot market trading on regional backbone infra (2025 – 2030)

### Pilot trading and institutional development

- Countries that are ready commence pilot market trading
- Development of market governance structure
- Regional Market Operator established
- Full market rules developed, including potential intraday and balancing markets
- Trading over new interconnectors as they are built
- Continuous capacity building
- Testing/learning

## Step 3: Transition from pilot market operation to long-term market development (2030 – )

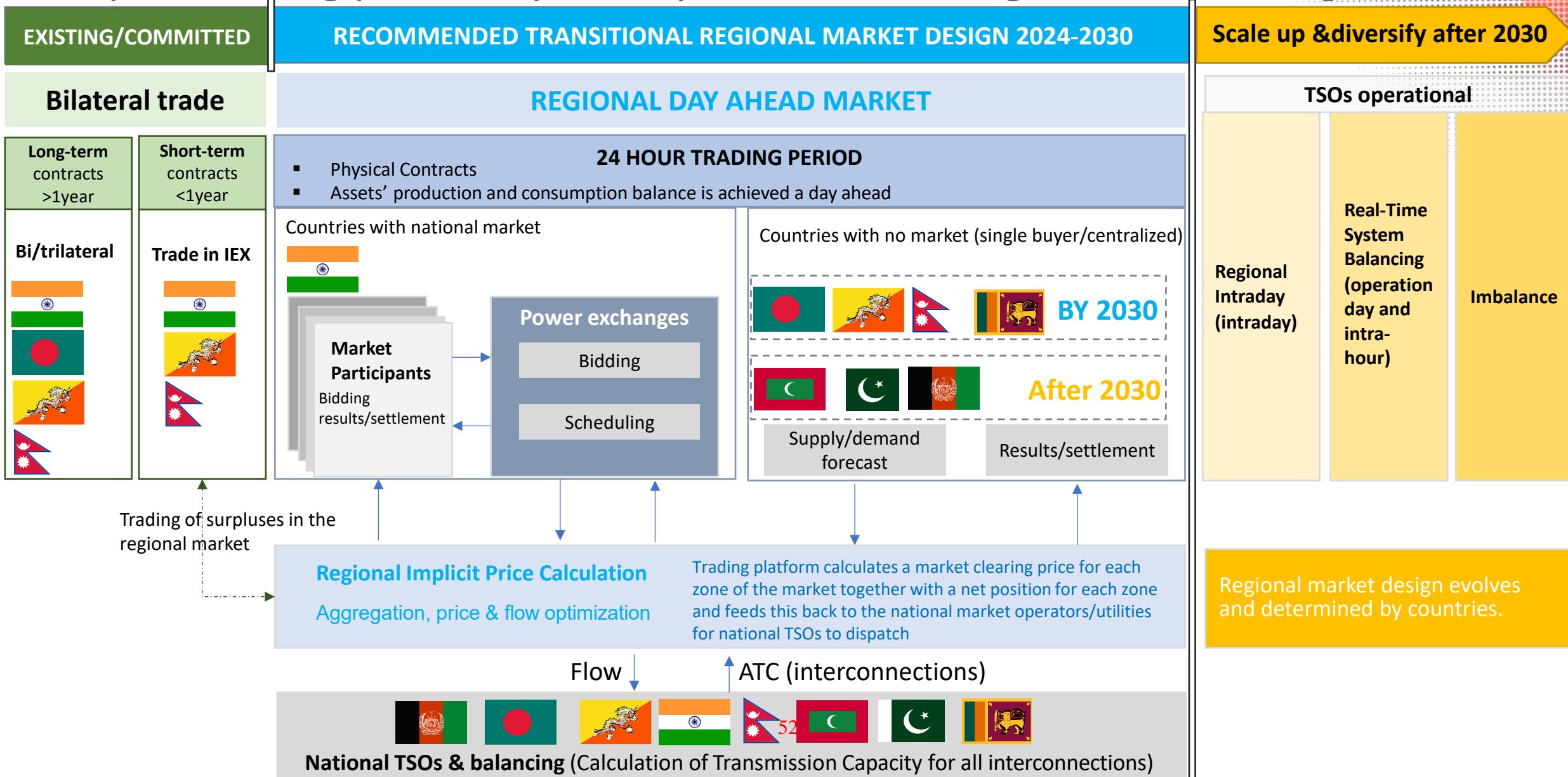
### Market fully operational

- Management and operation of processes
- Market monitoring/surveillance
- Routine reporting to regional regulators
- Continued integration of new hard infra as it is commissioned
- Expansion of market participation, possible integration with other regional markets

## Benefits of Regional Market for South Asia – complementing existing trades and national markets

- **Increased liquidity:** Each country will gain access to the wider region's resources through the regional market and by default this increases liquidity in the existing national markets (e.g. Indian PXs).
- **Single interface:** The national market doesn't have to sign up new members, create multiple bank accounts etc. for other countries. National approval is required for participants to trade in the regional market.
- **Welfare gains:** Increasing the size of a market, by bringing together more supply and demand into it, shows welfare gains and an optimized used of assets and resources
- International experience (USA, EU, SAPP, MER, among others) shows that regional electricity markets are the right tools to do so because:
  - The design of regional markets has proven to be flexible enough to cope with any pre-existing requisite without destroying value to already existing institutions (see EU example)
  - They remove legal / technical / regulatory barriers since all players follow the same set of rules, regardless of their location, including open access and transparent transmission arrangements/tariffs
  - Players have appropriate representation on the governance structures and can influence market rules and proposed changes
  - They provide simple and transparent means for trading by centralising bids and offers is accessible and easy-to-use platforms that acts as a central counter party
  - There is no financial risk to sellers as buyers have to provide sufficient credit and/or bank guarantees, and financial settlements are performed after market clears
- **Technical benefits:** regional markets allow for increased reliability and security, and can help the integration of variable resources by correctly pricing the value of flexibility, capacity, storage and ancillary services

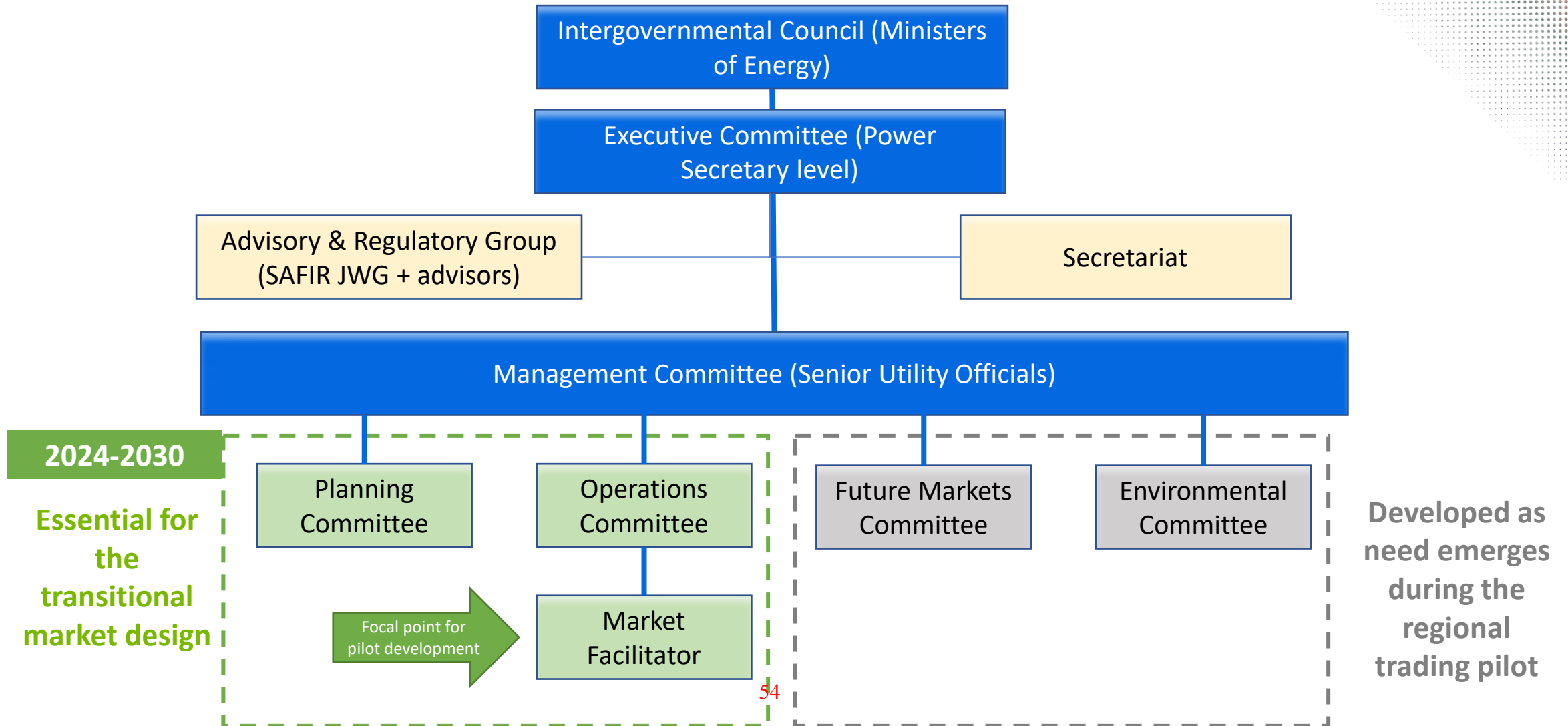
# Recommended transitional electricity market trading in South Asia – to start with pilot trading platform pilot in parallel to existing bilateral trading



## Recommended Governance Framework

- The following documents would govern the Electricity Market of South Asia .
- In case of inconsistencies, the first document shall have precedence over the second document, and the second document over the third document.
  1. An Inter-governmental Agreement on a Governance Framework for the Electricity Market of South Asia
  2. The Electricity Market of South Asia Commercial Code (Market Rules)
  3. The Electricity Market of South Asia Technical Code (Common Minimum Grid Code)

# Recommended Governance/institutional Structure for the transitional market design



# The Role of the Market Facilitator

- While in developed regional markets it would be expected to have a regional market operator, or a common platform to trade (or common algorithm), in incipient market structures, the role of a market facilitator could suffice.
- The market facilitator would:
  - Act as a facilitator rather than a market operator.
  - Parties would trade on the basis of bilateral contracts and make their own arrangements for settlement.
  - But parties must inform the facilitator of the details of the origin, destination, start time, etc.
  - Parties must ensure that they have the appropriate level of interconnector rights for operations.
  - The facilitator in turn subsequently confirms to the parties that the trade took place or if the actual trade differed from that notified in advance, it notifies them of the actual exchange.
  - The facilitator could have the right to refuse trade if it judges the trade to be infeasible.
- Such entity could be virtual or could be set up as the seed for a future regional market operator.

## Proposed Next Steps for Discussion

### JWG guidance on:

1. Recommended gradual approach and pathway: transitional tasks and piloting the regional market starting with a “shadow trading” to inform the development the pilot design and the associated rules (relevant initiatives include SAPP, EAPP, PAEM)
2. Finalizing and submission of Electricity Market of South Asia Market Design Options, Governance Framework, and Development Pathways
3. Devising an implementation plan to prepare for the recommended regional market pilot and capacity building for participating countries to prepare for future market institution/committees

THANK YOU

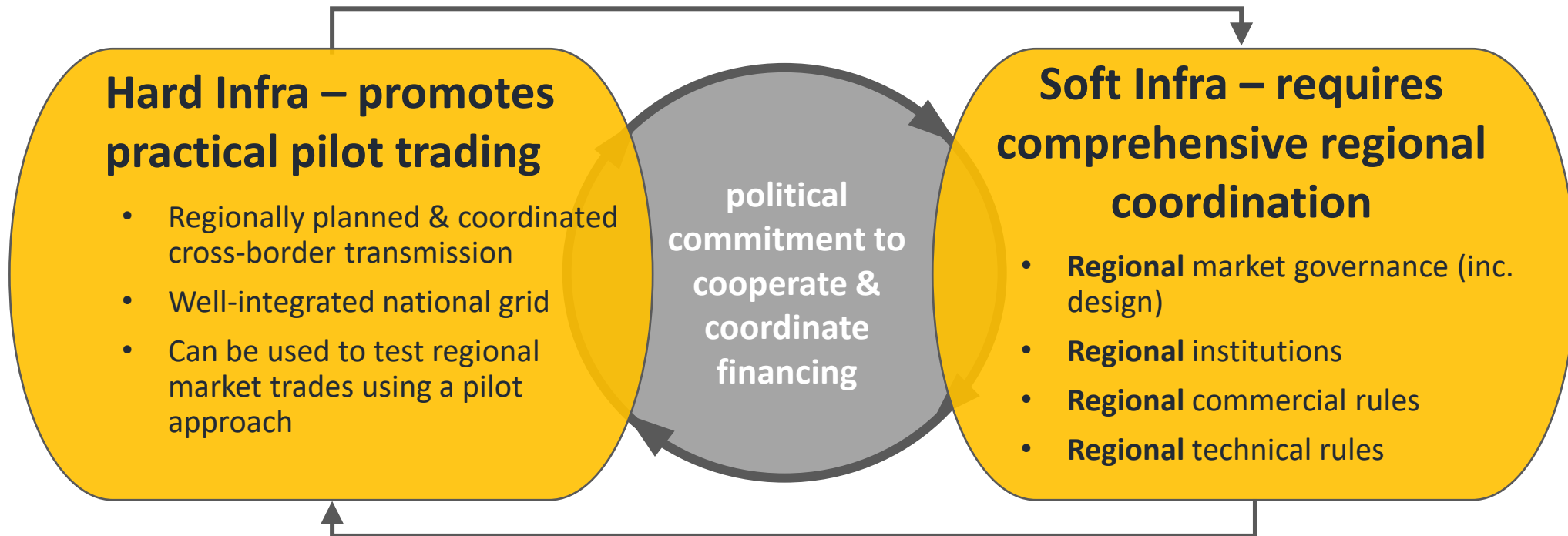
## Main feedback areas raised by SAFIR-JWG member countries

Feedback	Response

## Main feedback areas raised by SAFIR-JWG member countries

Feedback	Response

**Transition to a full regional market** requires **continuous interaction** between hard infra development (increased interconnection) and soft infra (increased regional cooperation)



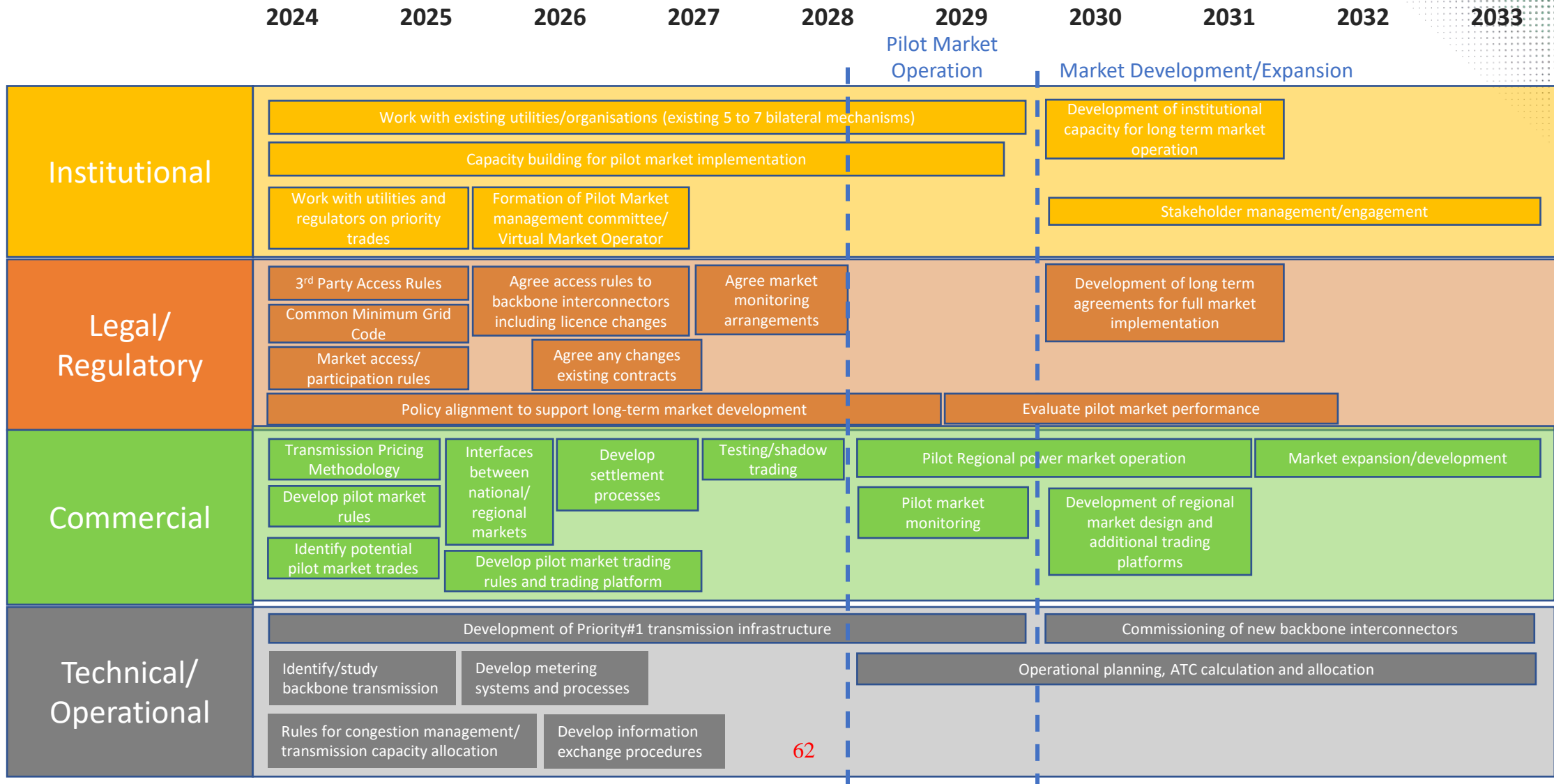
*mutually reinforce each other towards a regional market development if political commitment to cooperate on shared goal/vision is in place upfront*

The main stages of the evolutionary process from the transitional pilot of the regional market towards establishing the ultimate market design



Evolution towards regional competitive market in South Asia

# Timeline - the Bottom-up Hard Infra pathway as a transitional approach towards the ultimate market design model for South Asia, initially using existing infrastructure and trading over new interconnectors as they are commissioned



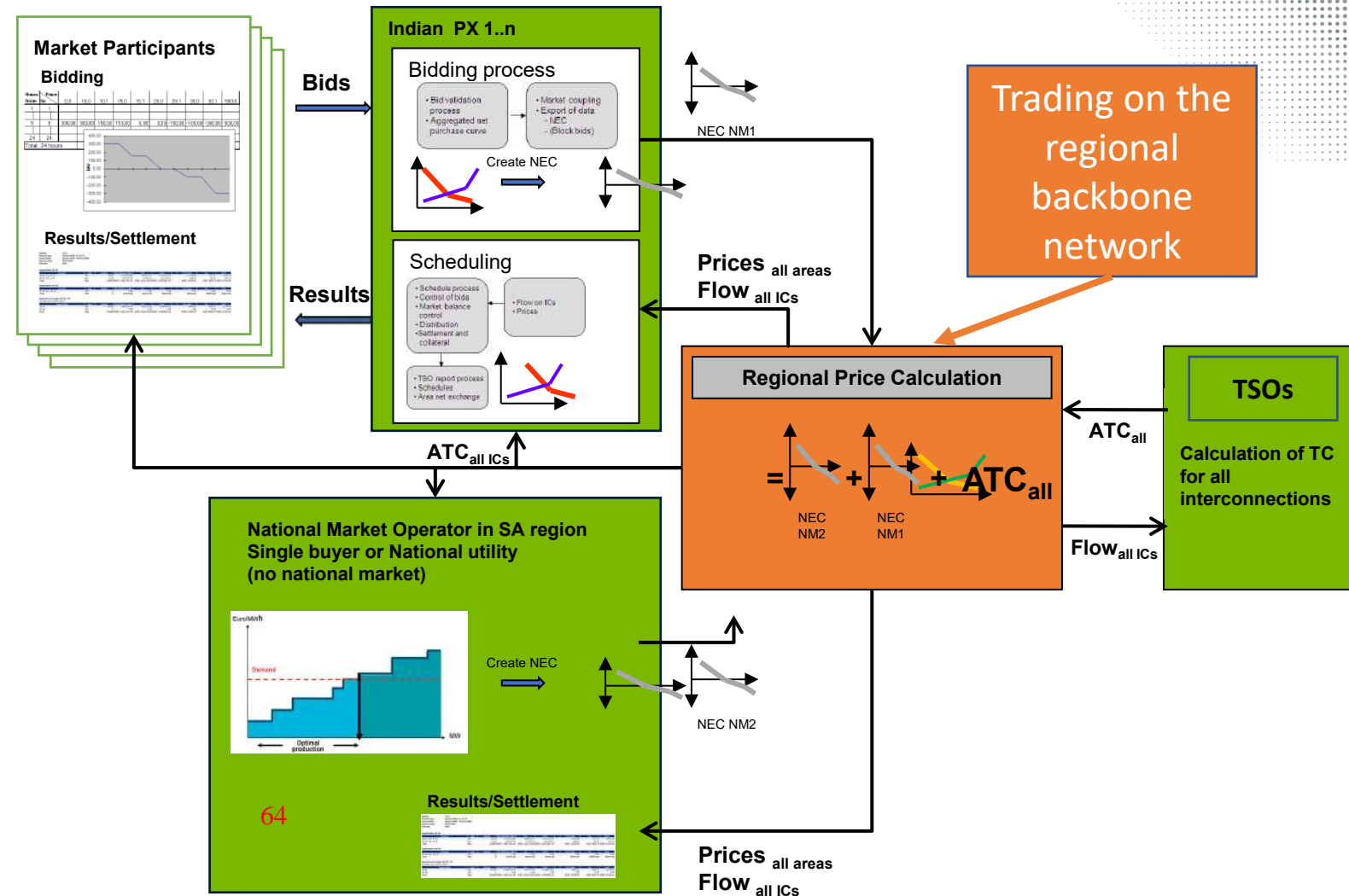
A regional cooperation and institutional capacity building will pave the way to support the transitional committees of the recommended governance/institutional framework

Focus		Description
<b>Regional transmission planning coordination group</b>		Officials representing each country from Ministry/utility power system planning to jointly review and finalize the South Asia Regional Electricity Transmission Plan 2035 (PLAN2035).
<b>9-12 months institutional capacity building program</b>	<b>Group-1:</b> System planning	Regional generation and transmission system planning: This will include least-cost power system planning under different scenarios of trade and system configurations (e.g., uptake of renewables, carbon tax, addition of new interconnectors, fuel availability and price, etc.)
	<b>Group-2:</b> System operations and trade (commercial)	Focused on market-based electricity trades on the regional level to include identification of trade, trade pricing and transmission pricing in the context of the South Asia region. SCED and other emerging needs will be incorporated.
	<b>Group-3:</b> Trade-related regulations	Focused on regulations pertaining to transmission access, fair pricing, and data transparency in light of the varying structure of the power sector in the South Asia region

# Ultimate market design: transition to full Regional Trading through a regional market beyond 2030: Tight coupling model facilitated by continued backbones development

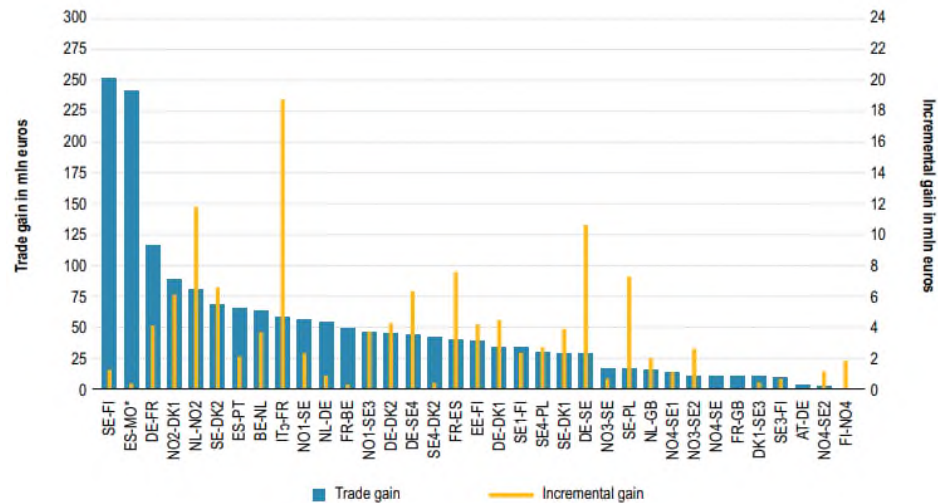
## A new regional market organically evolves to combine coupling and national markets

- The Indian PXs will still base their operation on their current market trading platforms;
- A new regional market is created to cater for all the current non-market SA countries;
- This new regional market will be the national market for the non-market SA countries as well as the regional coupling platform
- All parties to agree on a methodology to calculate and use of the interconnector capacity between the countries;
- Harmonized Market Book of Rules and a tight harmonization on operational procedures;
- It will allow India to still operate their respective markets with its market participant management;
- The Indian PXs will be counterparts to their own trades, but the regional market is the legal counterparts towards the other SA countries;
- Common database for coupling ;
- Allows a full market coupling optimization but still no issues for the Indian PXs;
- Similar to SAPP current model and early European model.



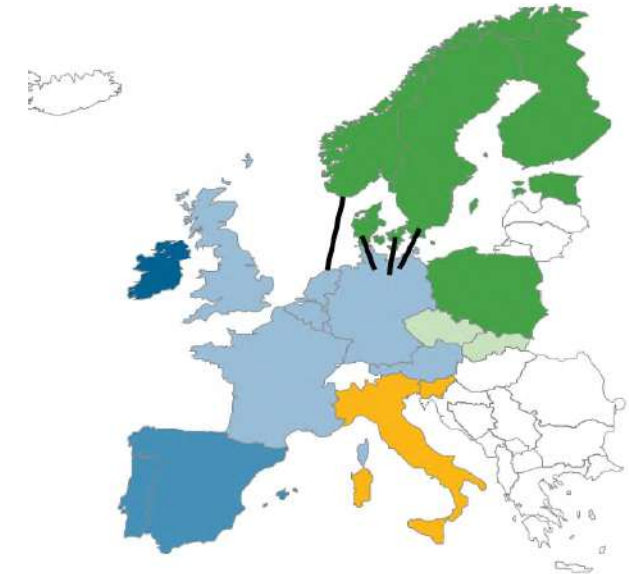
# An example of regional integration across countries with already existing PXs: The EU case

- EU single electricity market is an example of successful integration of separate PXs into a single net regional market
- All pre-existing PXs remain in operation
- In 2012, ACER estimated the benefits of market integration in €1 bn/yr only for the DA market



Source: PCR project, including APX-Endex, Epex Spot, Nordpool, GME, OMIE (2012)

- Since then, all market monitoring reports show how market integration has successfully increased liquidity, and improved the efficient use of cross-border capacities

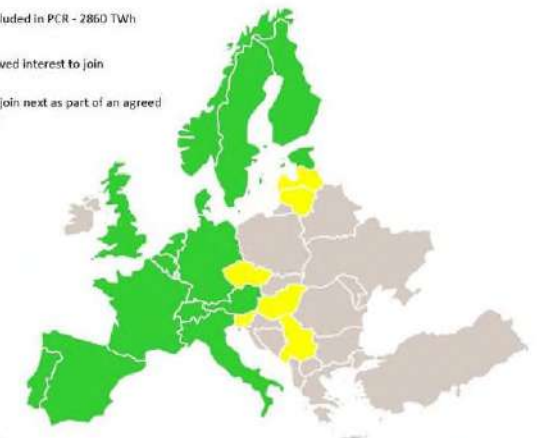


■ Nordic + EE + PL Price Coupling  
■ IT + C Volume Coupling  
■ IE + N. Ireland Price Coupling  
■ IT + SI Price Coupling  
■ CZ + SK Price Coupling  
■ Single market (no congestion)



## Development of the Price Coupling of Regions (PCR) Initiative

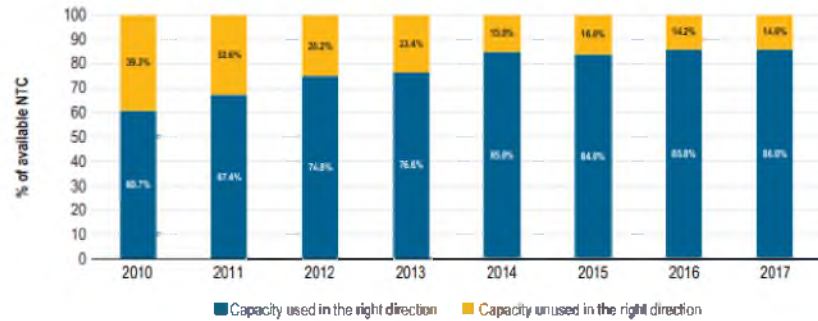
■ Markets initially included in PCR - 2860 TWh  
■ Markets which showed interest to join  
■ Markets that could join next as part of an agreed European roadmap



\*Source: IUCTE 2002 power consumption data

# Liquidity in the EU market

Figure 33: Progress made in the efficient use of electricity interconnectors in the DA market timeframe over the last 8 years – percentage of available capacity (NTC) used in the 'right direction' in the presence of a significant price differential (>1 euro/MWh) on 37 European electricity borders – 2010 (Q4)–2017 (%)



Source: ENTSO-E, Vulcanus, Nord Pool and ACER calculations (2018).

Figure 18: Yearly churn factors in major European intraday markets by type of trade – 2020–2022

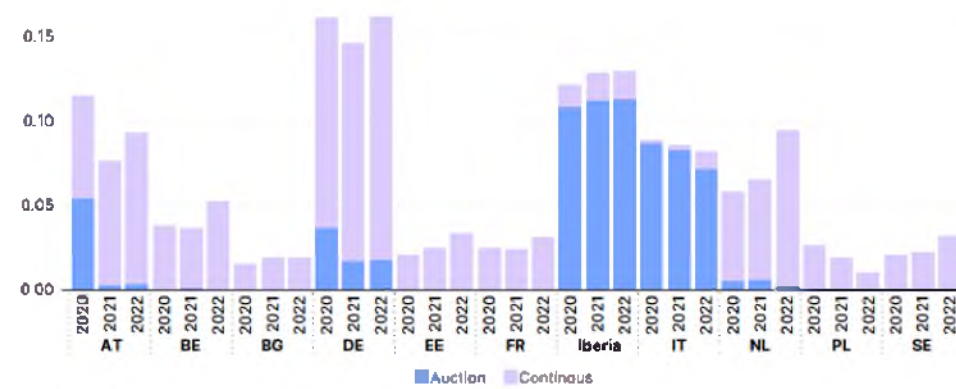
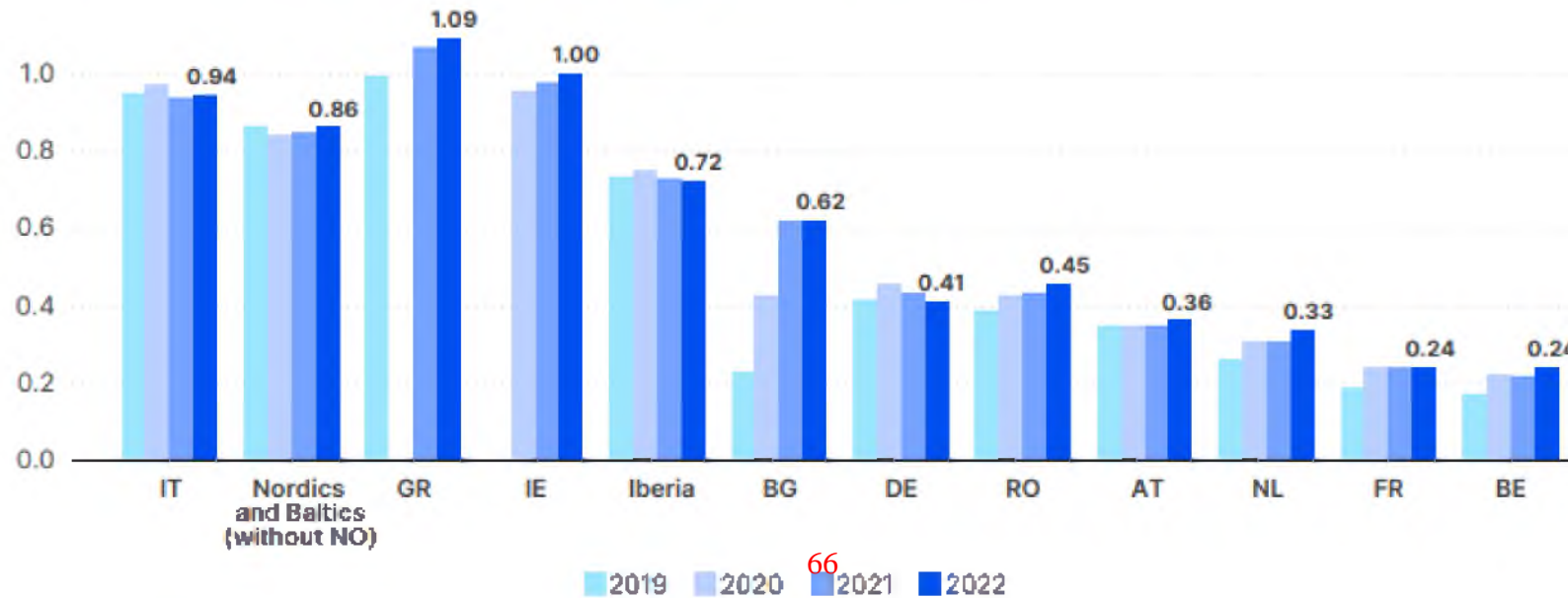


Figure 13: Churn factors in major European day-ahead markets - 2019-2022

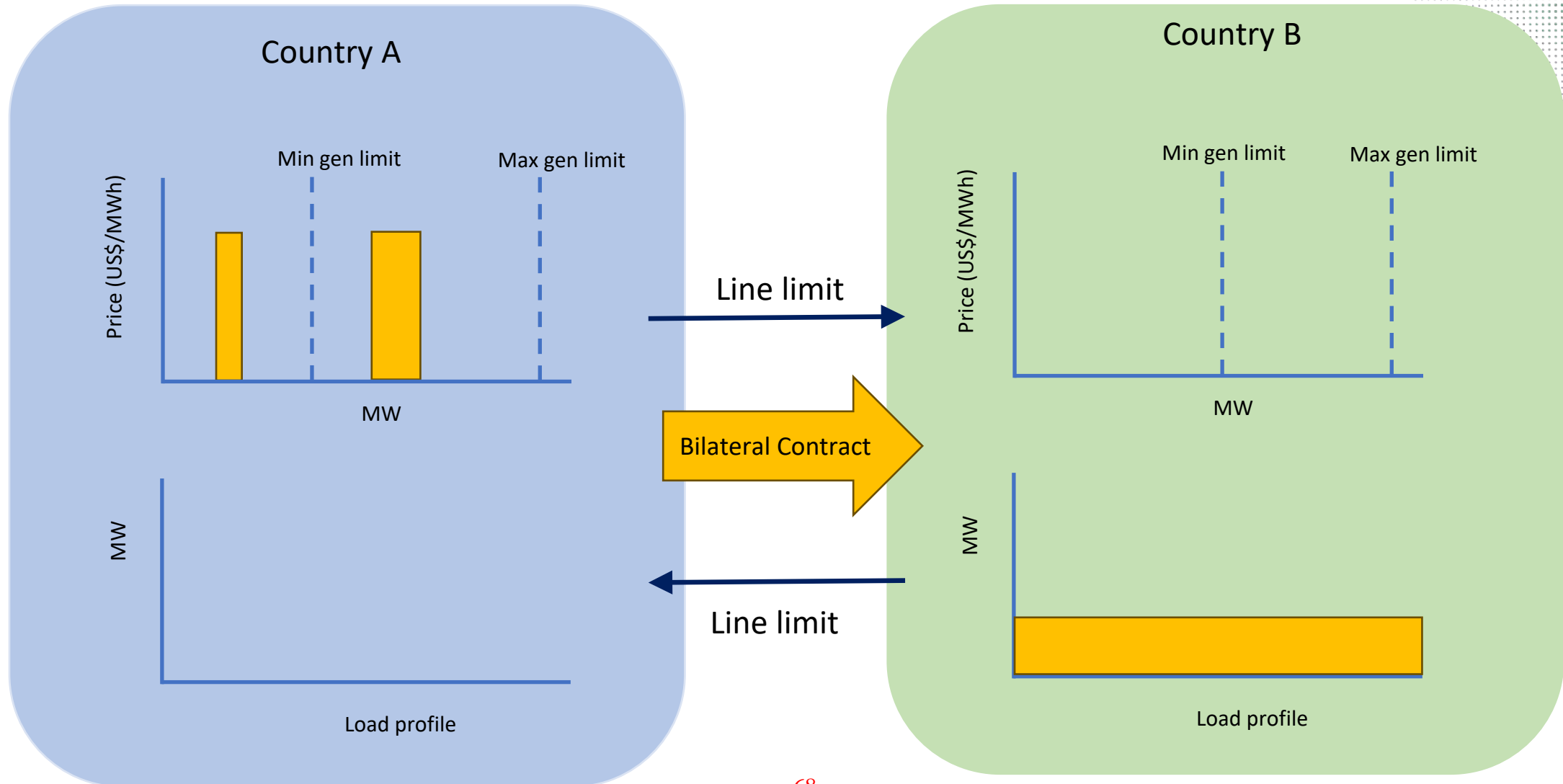


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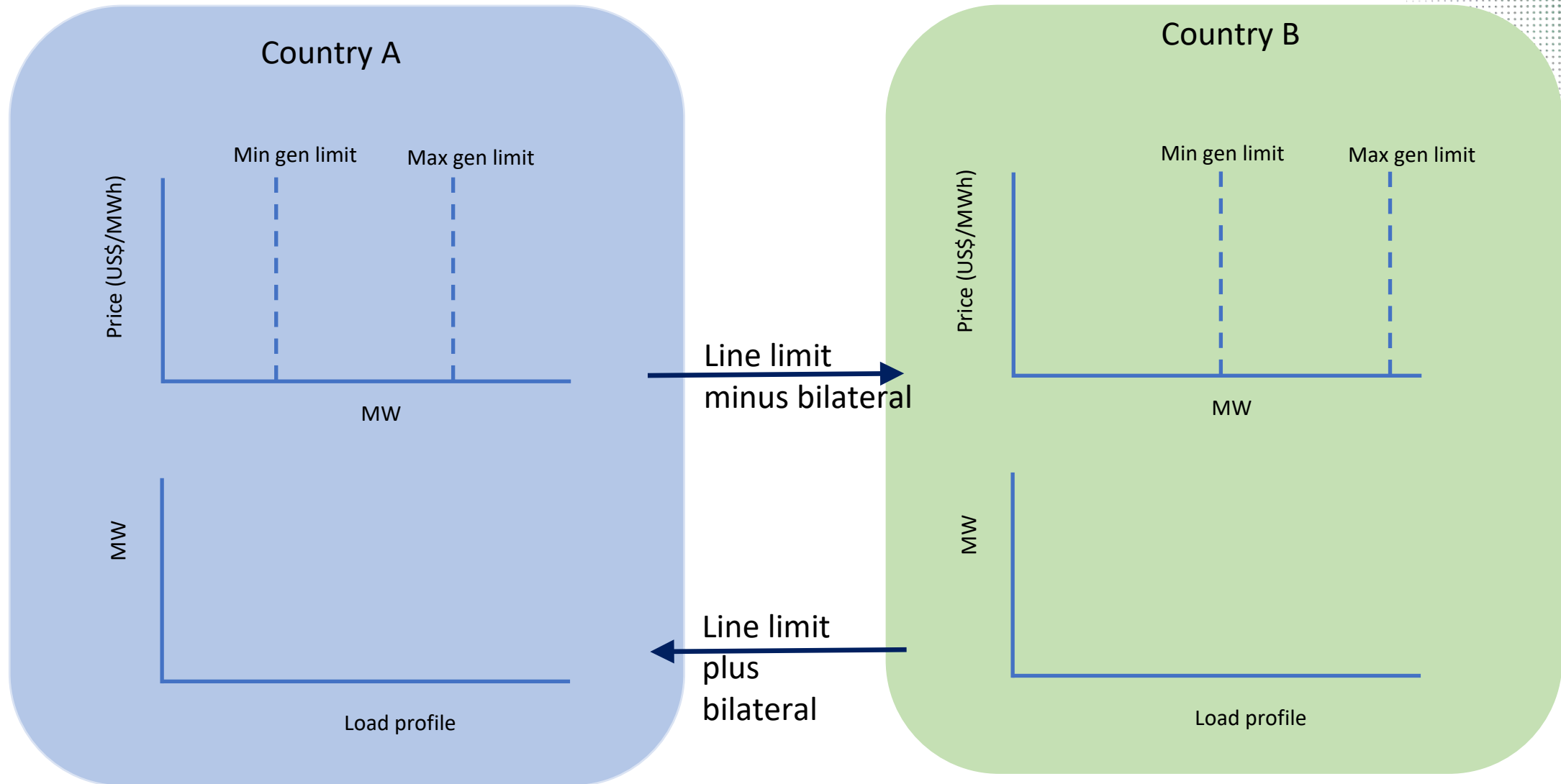
## Summary

- This approach could be used to evaluate the impact on liquidity
- Due to the small trade volumes in IEX currently the impact initially will be small
- Does the JWG see a need to carry out simulations to evaluate liquidity?
  - This would require data provision by JWG members
- The proposed market design brings substantial additionality to the existing trading arrangements
- Each country has the right to approve access to the regional market

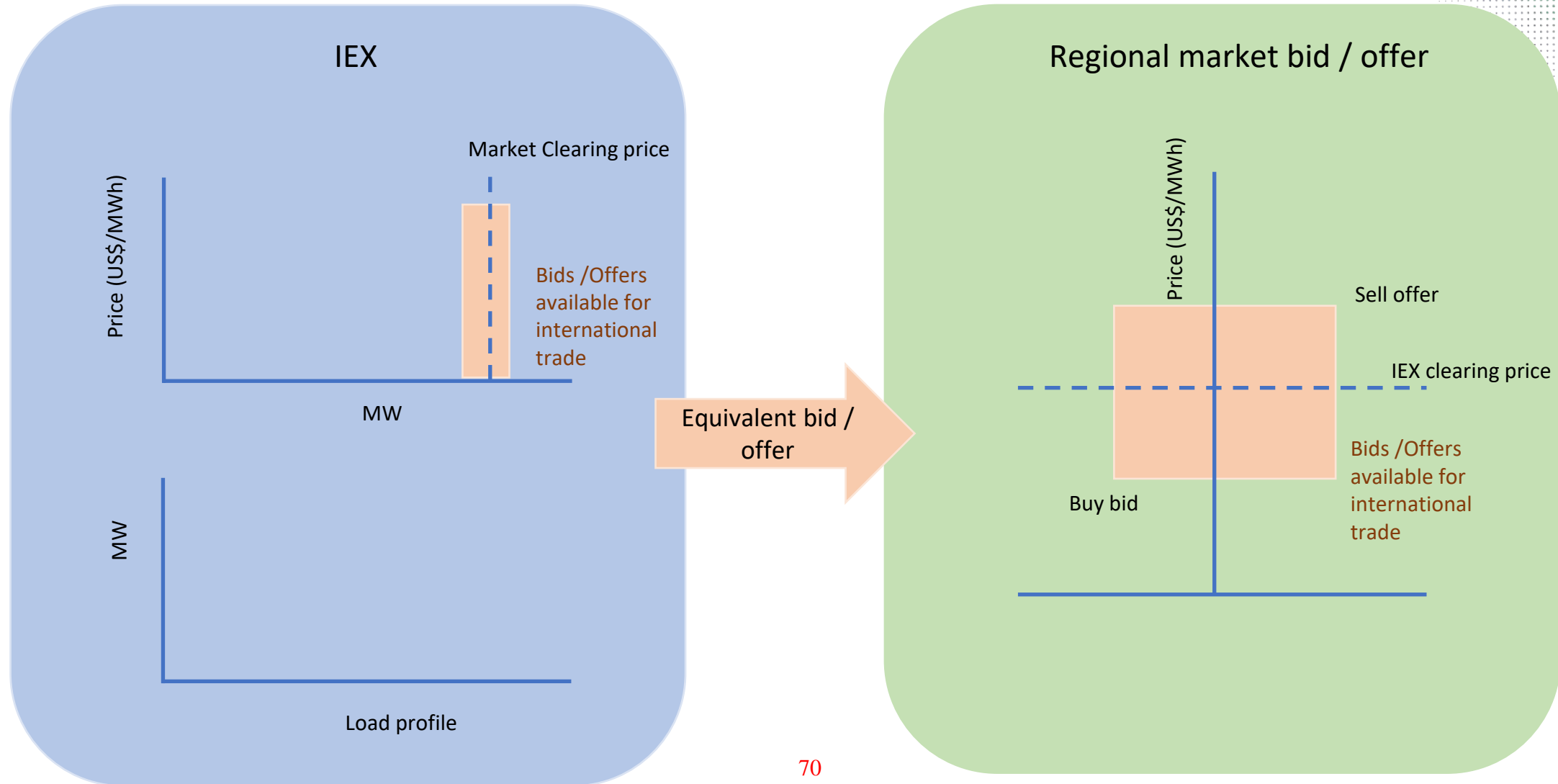
# Evaluating market benefits: Original case with bilateral contract



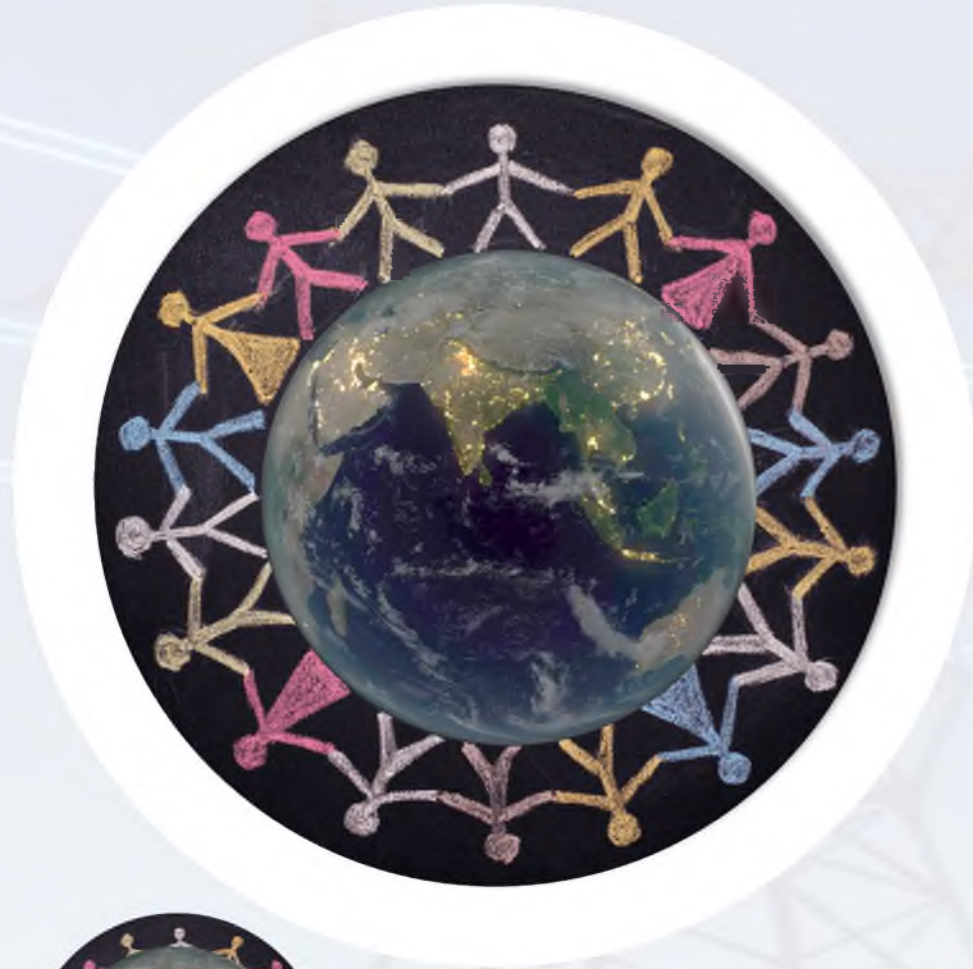
# Original case without bilateral contract



# The case of the IEX bidding into the Regional Market



# South Asia Regional Energy Partnership (SAREP)



**Presentation  
on  
Key Findings of SWG Study on ‘South Asia  
Energy/Electricity Regulations to develop  
Regulatory Road Map for Electricity/Energy  
Exchange and Energy Cooperation among South  
Asian Countries’**

26th SAFIR Executive Committee Meeting & 30<sup>th</sup> SAFIR Steering Committee Meeting  
12<sup>th</sup> December, 2024 , New Delhi, India

Presented by  
Mr. Arun K A, Director, Deloitte-India and Mr. Rajiv Ratna Panda, Regional Energy Trade Lead, SAREP

## Content

1. Introduction
2. Recommendations for regulatory changes in South Asia
3. Common Minimum Harmonized and Standardized Template of energy/electricity regulations for Energy Cooperation
4. Roadmap and action plan





## Key components of the report

### Common Minimum Harmonized and Standardized Template of energy/electricity regulations for Energy Cooperation

A master regulation /  
regulatory template that can  
be adopted by the South  
Asian countries after  
undertaking country specific  
customizations



### Country wise regulatory roadmap

The broader process of  
adoption of the “common  
minimum template” and  
associated regulatory changes  
considering intermediate and  
long term scenarios

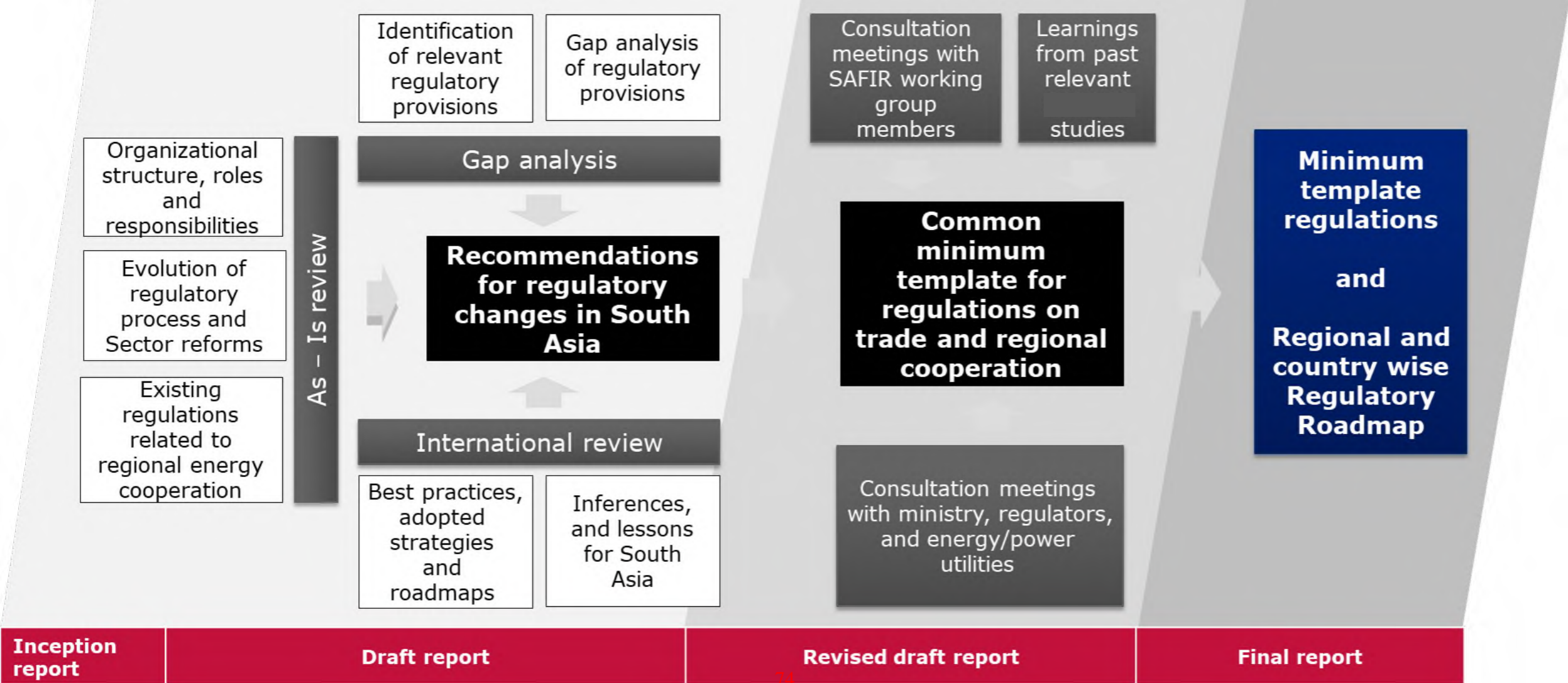


### Country wise action plan

Action plan for regulatory  
amendments or introduction  
of new regulations, beyond  
what is specified in the  
“common minimum  
template”



# Methodology



# Suggestions and comments obtained during stakeholder consultations: July 2022



## Bangladesh

- Govt. of Bangladesh is also considering a CBET policy document to be issued
- Policy clarity required on BERC's role on CBET
- A few more definitions to be added in the common minimum template

## Bhutan

- Role of Govt. is crucial
- Possibility of common vs country specific deviation settlement mechanisms may be explored

## Sri Lanka

- The recent crisis has prompted rethink on strategies.
- Law does not have any provision for CBET.
- CEB has to identify areas of regional coordination such as purchase of energy, ancillary services etc.

## Nepal

- Multiple suggestions on common template – frequency of information system, clarity on curtailments, meter reading, dedicated lines etc.

## India

- Need for MBMS model, deviation settlement etc.



**The study report has been further modified based on the feedback received during 04<sup>th</sup> SAFIR Working Group meeting held on 14 Feb 2023, in Kathmandu, Nepal.**



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FROM THE AMERICAN PEOPLE

# Recommendations for regulatory changes in South Asia

Regulatory & Institutional changes required to  
support Energy Cooperation and Trade



# Key Recommendations for Regulatory changes in South Asia

**1. Policy/rule of the Government, relating to regional energy cooperation**

- Reduce the ambiguities on regional energy cooperation framework and help in reducing the perceived investment risk in regional energy projects.

**5. Going beyond electricity – Natural Gas trade**

- Governments may preferably come up with a policy/guideline/rule on Cross Border trade of Natural Gas also in the future.

**2. Master regulation on regional Energy Cooperation**

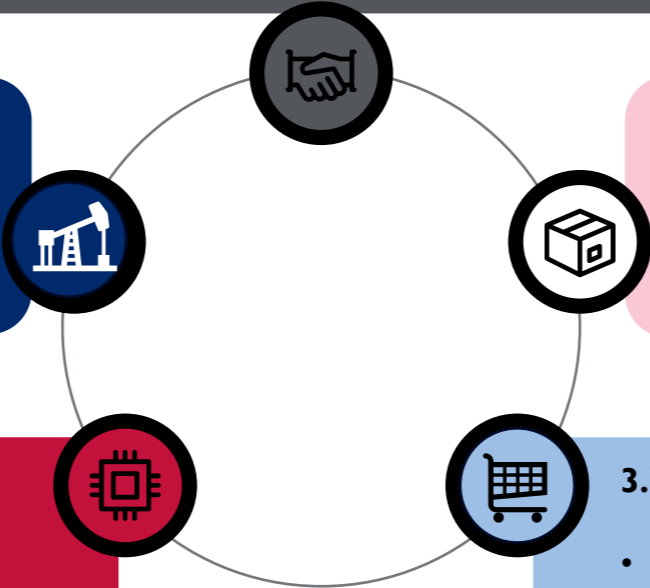
- Covered further in detail as “Model/Template Regulations”

**4. Grid code harmonization**

- May continue as per SAFIR’s “Common Minimum Grid Code”

**3. Wholesale Market**

- The member countries (other than India, Maldives & Pakistan) shall clarify type of competition envisaged regd. CBET – Role of private sector, traders, exchanges etc.



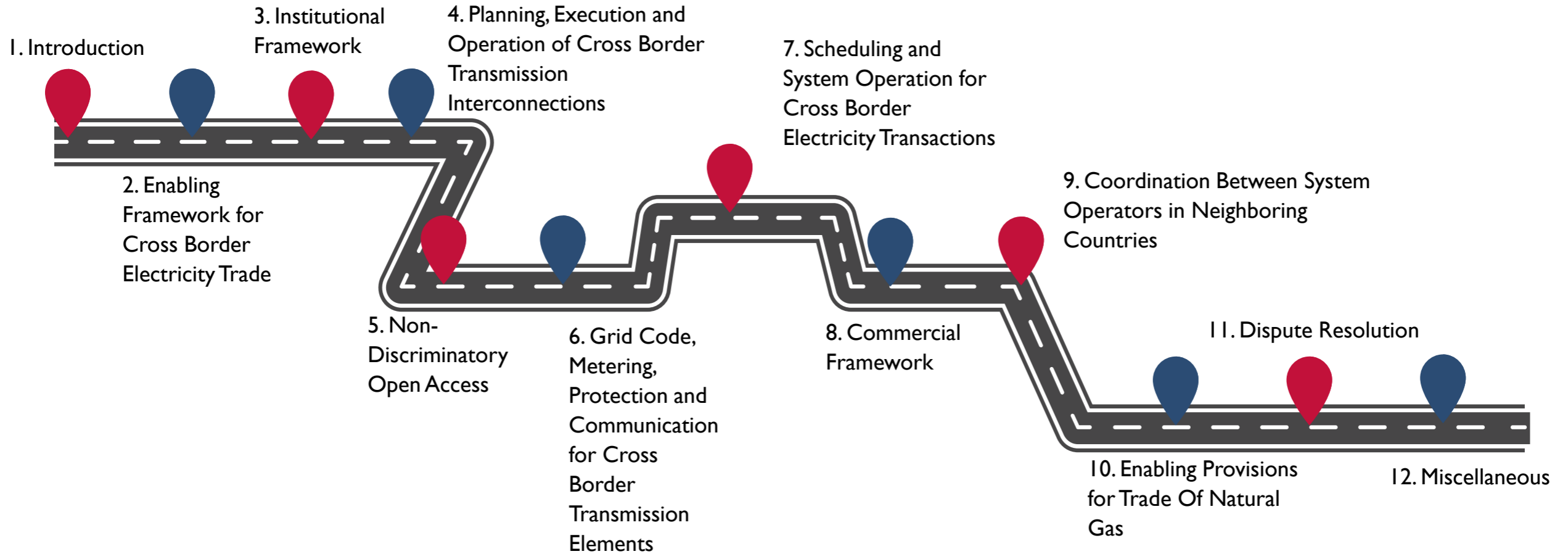


# Common Minimum Harmonized and Standardized Template of energy/electricity regulations for Energy Cooperation





# Contents of Common Minimum Harmonized and Standardized Template







# Key features of Common Minimum Harmonized and Standardized Template (1/6)

## Key terms defined:

<b>CBET Authorization</b>	Authorization granted by the Government to a Participating Entity for participating in CBET
<b>Authorized Participating Entities</b>	Participating Entities which have obtained Authorization for CBET
<b>Dedicated Interconnection</b>	Cross Border Transmission Interconnections constructed for the use of single or multiple Participating Entities, for the entire lifetime of such interconnections
<b>National Transmission Utility</b>	Entity which has overall responsibility for operating and maintaining the national transmission network
<b>National System Operator</b>	Agency entrusted with the scheduling and operational of national level transmission grid of each Country
<b>Open Access (OA)</b>	Non-discriminatory provision for the use of transmission network by any Participating Entities
<b>Open Access Nodal Agency</b>	STOA Nodal Agency, MTOA Nodal Agency or LTOA Nodal Agency for processing OA applications
<b>Regulatory Authority</b>	Regulatory body, which is entrusted with the regulation of electricity sector at the national level, in each Country
<b>Settlement Nodal Agency</b>	Nodal agency as notified Government of each country for settlement of grid operation related charges with the entities in neighboring countries
<b>Shared Interconnection -</b>	Cross Border Transmission Interconnections which are constructed without any permanently identified users
<b>Short Term, Medium Term and Long Term OA</b>	OA for up to one month; three month to five years; and not less than fifteen years respectively
<b>Transmission Planning Agency</b>	Agency designated so by the Government of each Country for undertaking transmission planning at national level
<b>Transmission Service Provider</b>	Entity which owns and operates a transmission line

# Key features of Common Minimum Harmonized and Standardized Template (2/6)

## Role of key entities

	<p><b>Regulatory Authority</b></p>	<ul style="list-style-type: none"> <li>• Approve guidelines for OA</li> <li>• Notify OA nodal agencies</li> <li>• Develop transmission pricing framework, and determine transmission tariffs</li> <li>• Develop transmission loss determination mechanism</li> <li>• Define terms and conditions for power traders, and power market platforms</li> </ul>
	<p><b>Transmission Planning Agency</b></p>	<ul style="list-style-type: none"> <li>• Plan new CBET interconnections</li> <li>• Finalize specifications for metering, network protection and communication facilities for Cross Border Transmission Interconnections</li> </ul>
	<p><b>National System Operator</b></p>	<ul style="list-style-type: none"> <li>• Operate the national system including cross border transactions</li> <li>• Conduct system studies and publish corridor wise total transmission capacity, available transmission capacity, and available transmission margins, for the current period and forecast for the future period</li> </ul>
	<p><b>CBET Transmission Service Provider</b></p>	<ul style="list-style-type: none"> <li>• Own, operate and maintain Cross Border Transmission Interconnections, including the associated metering systems, network protection systems, voice and data communication systems</li> <li>• Provide adequate information and data to National System Operator and Open Access Nodal Agencies, for matters relating to energy accounting, settlement and Open Access.</li> </ul>



## Key features of Common Minimum Harmonized and Standardized Template (3/6) Transmission Planning

### Shared Interconnections

- TPA to assess the need for new interconnections, at least once in a year
- Participating Entities can also request TPA to consider new lines
- Tariff to be determined / adopted by Regulatory Authority

### Dedicated Interconnections

- To be built by the relevant Participating Entities, after obtaining approval of TPA
- Not bound to ensure Open Access

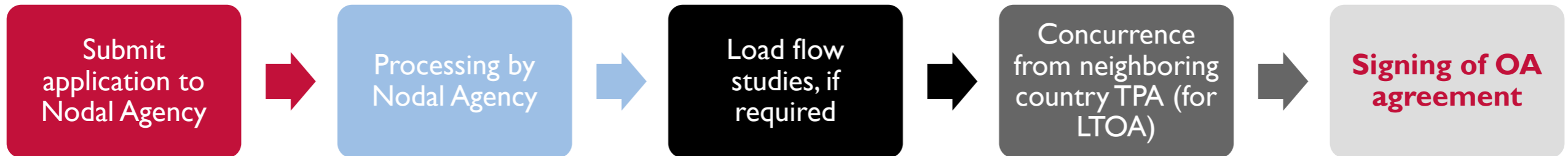
# Key features of Common Minimum Harmonized and Standardized Template (4/6)

## Open Access

- Authorized Participating Entities shall have the right to obtain **Open Access** to transmission network, covering the **national transmission grid and Shared Interconnections**, for undertaking Cross Border Trade.



- Procedure for approval**



# Key features of Common Minimum Harmonized and Standardized Template (5/6)

## Key technical aspects

<b>GRID CODE</b>	Strive to ensure harmony – Common Minimum Grid Code
<b>METERING, PROTECTION AND COMMUNICATION</b>	<p>TPA to finalize metering, and protection system specification, after consulting with System Operator</p> <p>System Operator to finalize communication system specification, after consulting with TPA</p>
<b>SCHEDULING</b>	Done for each Cross Border Transmission Interconnection point, for each 15 minute time interval. Schedule to be submitted before 5 PM IST of prev. day
<b>SYSTEM OPERATION</b>	<p>System Operation as per respective grid codes</p> <p>Deviation Settlement mechanism as per applicable country regulations</p> <p>National System Operator of Remote Country to be informed about major outages</p>

## Key features of Common Minimum Harmonized and Standardized Template (6/6)

### Other aspects

#### Energy accounting

A committee constituted by the National System Operator, with representatives from National Transmission Utility and CBET Transmission Service Providers shall be constituted to prepare monthly energy accounts at the national level for CBET

#### Dispute Settlement

In case of disputes relating to Cross Border Electricity Trade between entities registered under different Countries, if the dispute cannot be resolved in an amiable manner, the parties may approach an international arbitration forum at a neutral country for dispute resolution

#### Emergency Procedures

Black start support to neighboring country's system operator (on commercial basis)

#### Information Sharing

System operators to ensure seamless information sharing with system operator of neighboring country



# Roadmap and action plan

The broader process of adoption of the “common minimum template”



# Country wise roadmap (1/2)

Components	Current scenario	Intermediate scenario	Ideal target scenario
<b>Common components for Afghanistan, Bangladesh, Bhutan, Nepal, Sri Lanka</b>			
<b>Adoption of harmonized template regulations for regional energy cooperation</b>	<b>Specific regulations for regional energy cooperation do not exist</b>	<b>Harmonized template regulations customized to the needs of the country prepared</b>	<b>Harmonized template regulations customized for the country adopted and implemented</b>
<b>Afghanistan</b>			
<b>Regulatory interventions other than adoption of harmonized template regulations</b>	<b>Grid code does not exist</b>	<b>Formation of a team for development of grid code</b>	<b>Grid code developed and adopted</b>
<b>Bangladesh and Bhutan</b>			
<b>Regulatory interventions other than adoption of harmonized template regulations</b>	<b>Detailed regulations for scheduling, system balancing, and deviation settlement does not exist</b>	<b>Formation of a team for development of regulations for scheduling, system balancing, and deviation settlement</b>	<b>Regulations for scheduling, system balancing, and deviation settlement developed and adopted</b>

## Country wise roadmap (2/2)

Components	Current scenario	Intermediate scenario	Ideal target scenario
<b>Nepal</b>			
<b>Regulatory interventions other than adoption of harmonized template regulations</b>	Regulations for scheduling, system balancing, deviation settlement, power trading, open access and transmission pricing does not exist	Formation of a taskforce/ working group/technical assistance team for development of regulatory framework	Regulations for scheduling, system balancing, deviation settlement, power trading, open access and transmission pricing developed and adopted
<b>Pakistan</b>			
<b>Regulatory interventions other than adoption of harmonized template regulations</b>	Competitive market trial operations are undergoing	Regulatory interventions identified based on results of CTBCM trial operations	Regulatory interventions implemented based on results of CTBCM trial operations
<b>Sri Lanka</b>			
<b>Regulatory interventions other than adoption of harmonized template regulations</b>	Regulatory framework for transmission pricing exists as part of overall bulk supply tariff determination	Formation of a taskforce/ working group/technical assistance team for amendment of Tariff Methodology, to cover transmission pricing as a standalone element	Tariff Methodology amended to cover transmission pricing as a standalone element

# Thank You



“

Change is inevitable, but  
transformation is a choice.

HEATHER ASH AMARA

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“It always seems  
impossible until  
it's done.”

- Nelson Mandela



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## Annexure-V

# Assessment of Potential Benefits of Cross Border Electricity Trade & Framework for Ancillary Services Market in South Asia





# Table of Contents

01

Objective

02

Key findings

03

Ancillary Services Framework

04

Annexure



## Objective of the Study

Assessing the potential benefits of cross border electricity trade for reduction in average electricity supply costs, facilitating grid balancing of renewable energy integration, and suggesting a framework for ancillary service market in the South Asia

## Uniqueness

- 1 Detailed Modelling of power system operations of BBINS over **8760 hours**
- 2 Detailed capacity expansion modelling of power systems of BBINS for **15** years over the period **2021 – 2035**
- 3 Nuanced Cost **Sensitivity Analysis** for transmission enhancement, regional supply balance, and cross border sharing of reserves
- 4 **Detailed Modelling** for identification of optimal timeline, location, and technology for capacity additions to minimize power system costs..
- 5 Computation of **capacity credits** of RE generation under regional cooperation
- 6 **92** Framework for common **ancillary service market** for South Asian nations



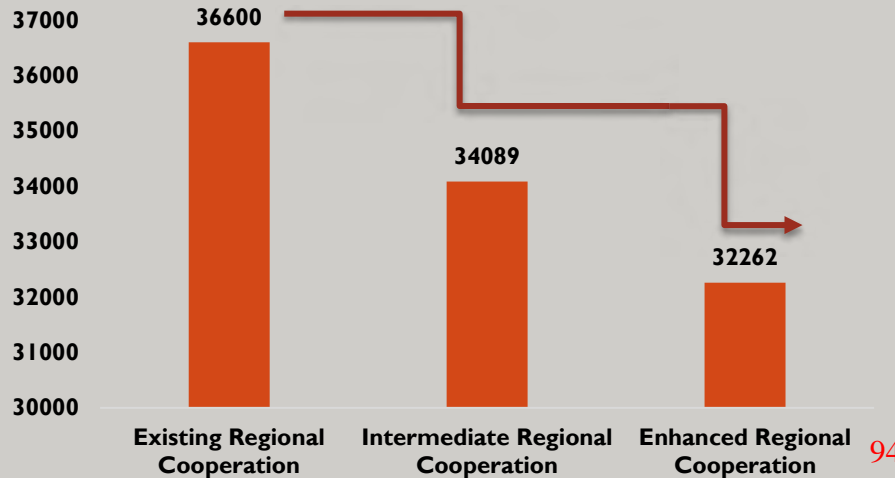
# Key Findings of the Study

# Regional Cooperation: Unlocking \$11 Billion Savings by 2035

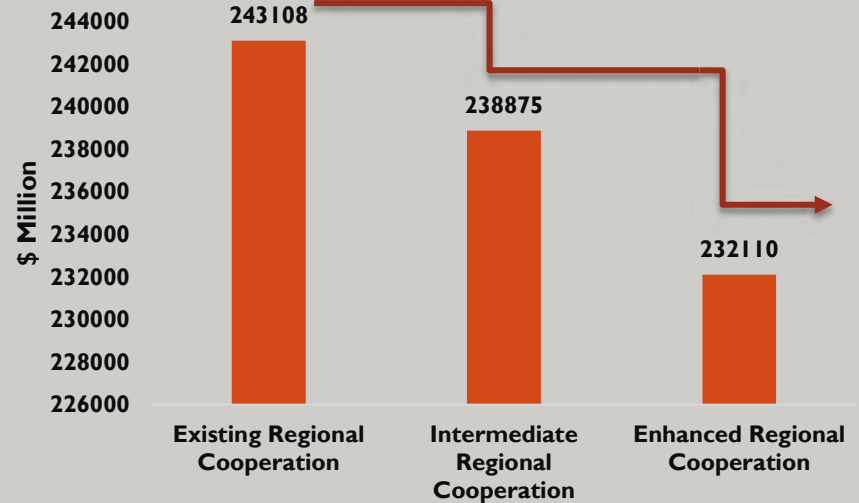
Regional Cooperation across BBINS (Bangladesh, Bhutan, India, Nepal, Sri Lanka) could have reduced power system operation costs by **13%** in 2019.

Establishing such collaboration today has the potential to achieve cumulative savings of **\$11 billion** by 2035, demonstrating the immense value of a unified approach to energy planning and resource sharing

### Declining Costs in 2019

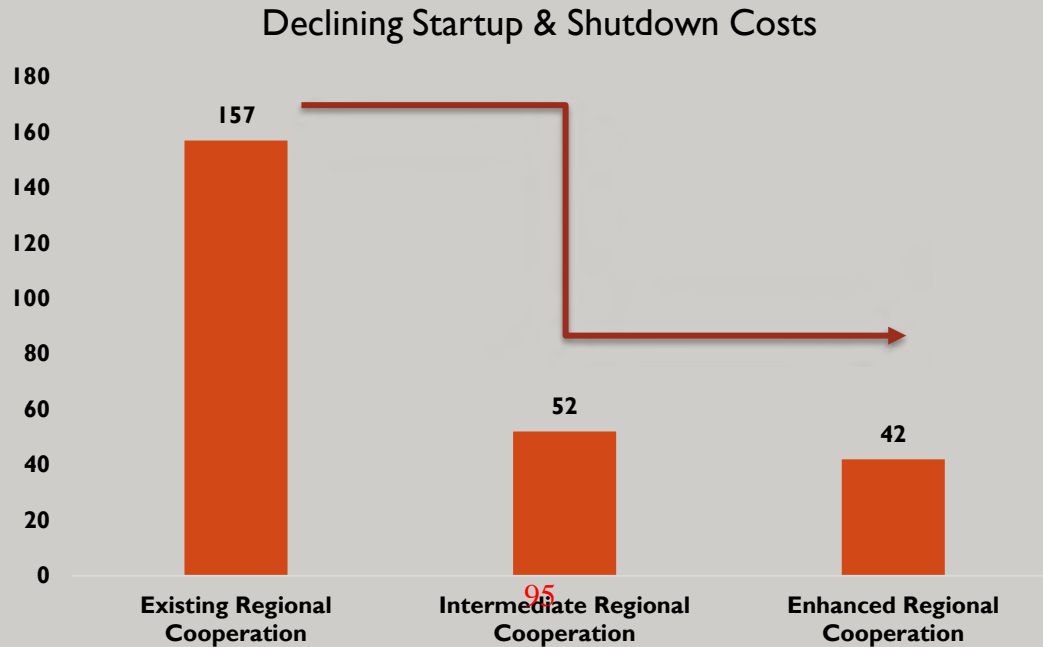


### Declining Costs in 2035



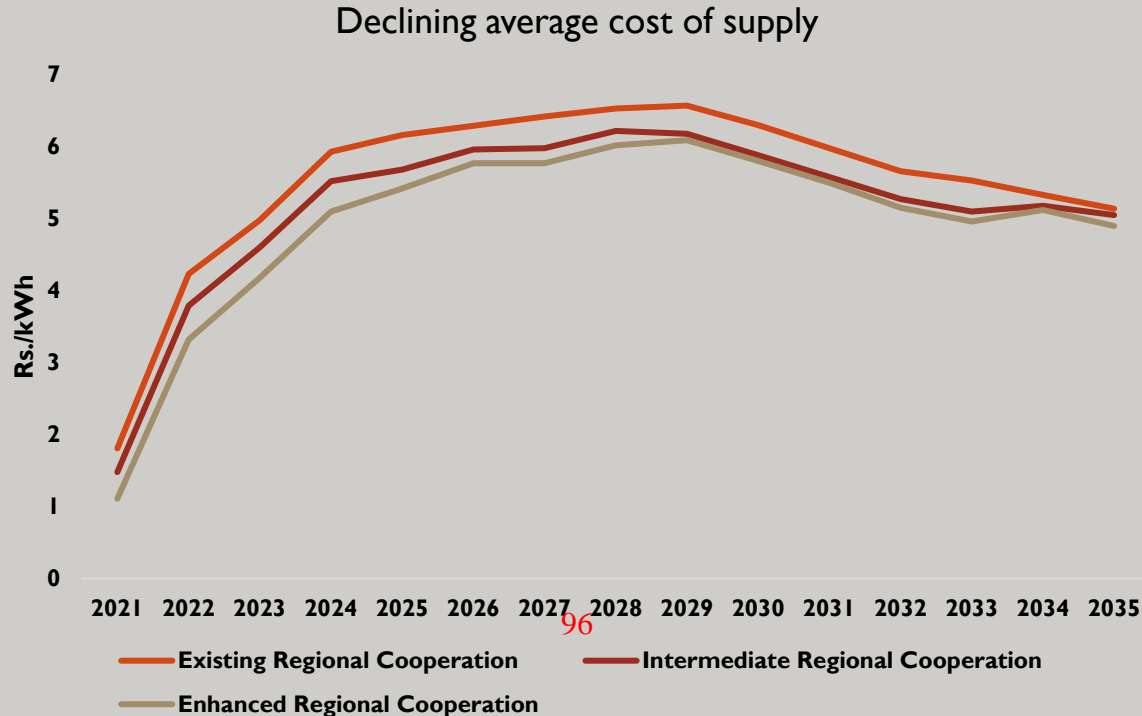
# 73% Reduction in Startup & Shutdown Costs

Regional cooperation could have resulted in a sharp reduction in the number of startups and shutdowns, resulting in approximately a **73%** reduction in startup and shutdown costs in 2019.



# 5% Decline in Average Cost of Supply (Rs./kWh)

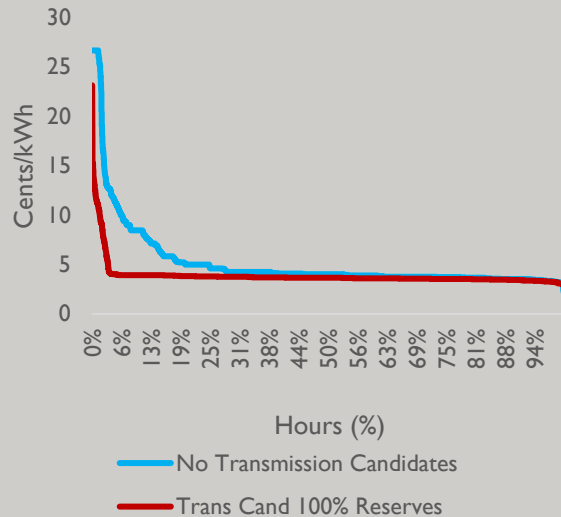
Enhanced regional cooperation could result in 5% reduction in average cost of supply in 2035 in the South Asian region.



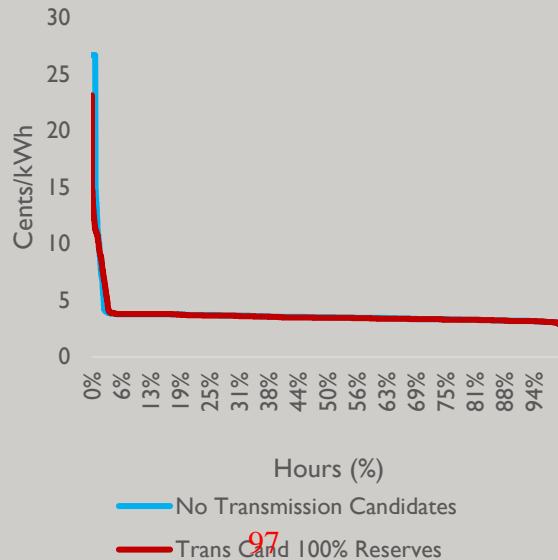
# Reduction in System Marginal Prices by a factor of 1.4

The system marginal price of South Asian nations in 2019 is, on average, **1.4** times as high with existing regional cooperation when compared to enhanced regional cooperation.

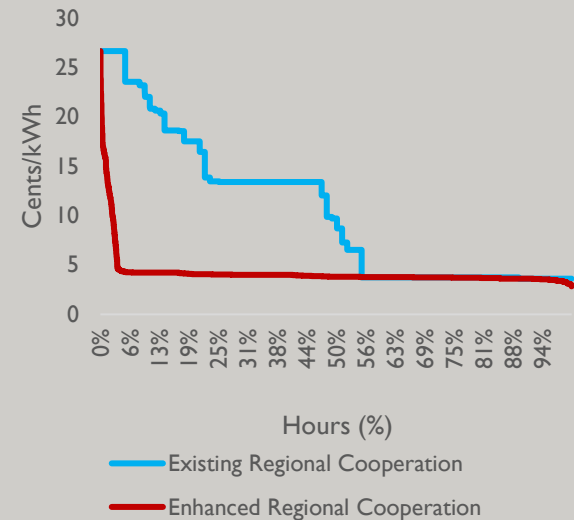
### System Marginal Price of Bangladesh



### System Marginal Price of Nepal



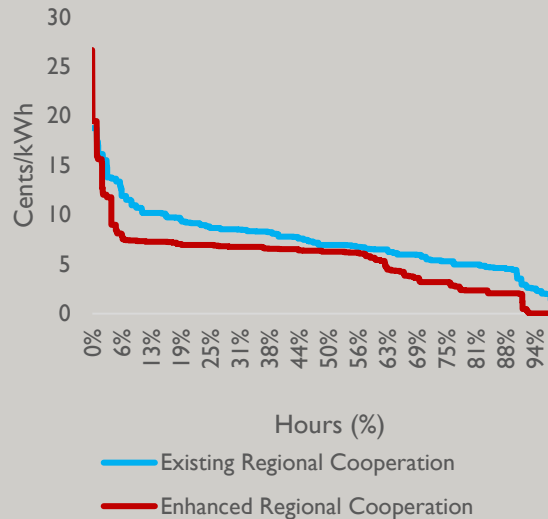
### System Marginal Price of Sri Lanka



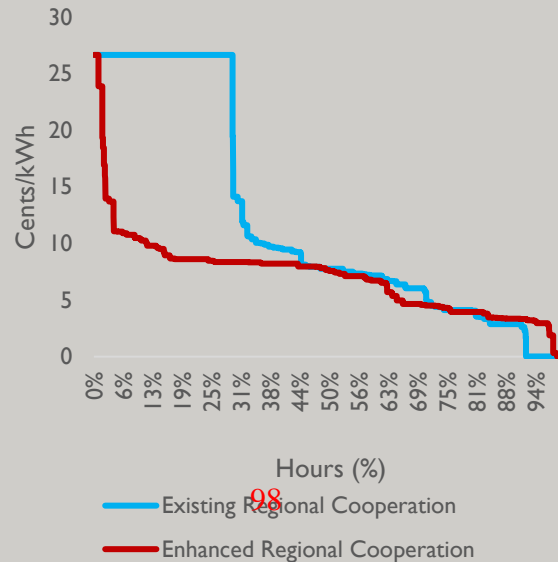
# Future Potential for Price Reduction

Projections for 2035 show that system marginal prices could be **1.6 – 2** times higher without regional cooperation. Future analysis shows a significant increase in cross border trading activity, with dual curves remaining greater than 0 for 90% of 8760 hours.

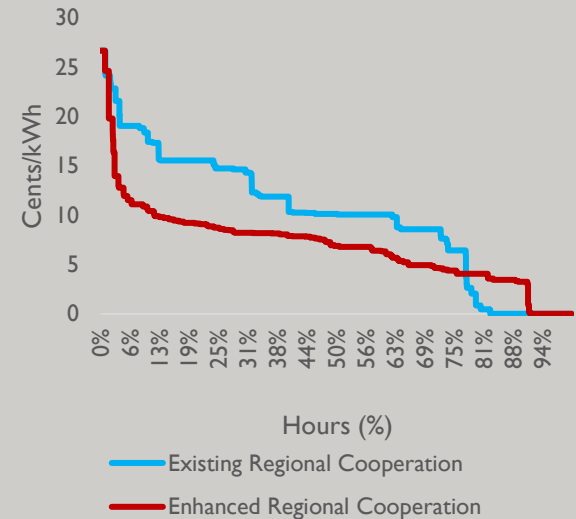
### System Marginal Price of Bangladesh



### System Marginal Price of Nepal

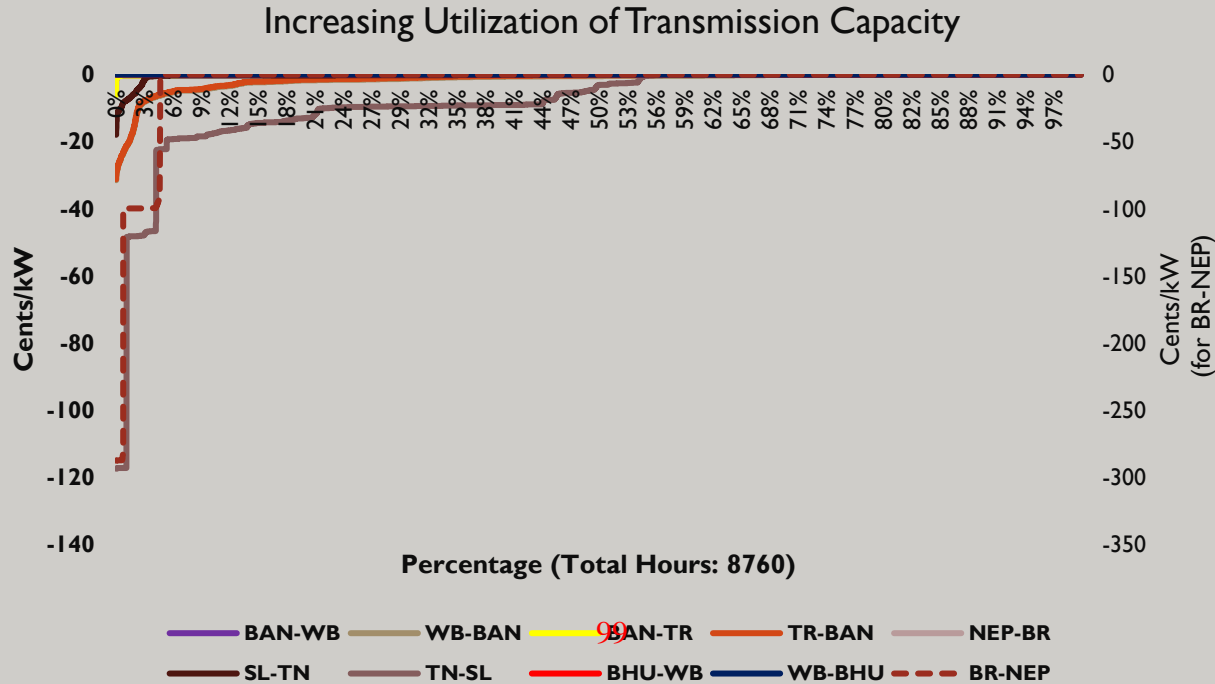


### System Marginal Price of Sri Lanka



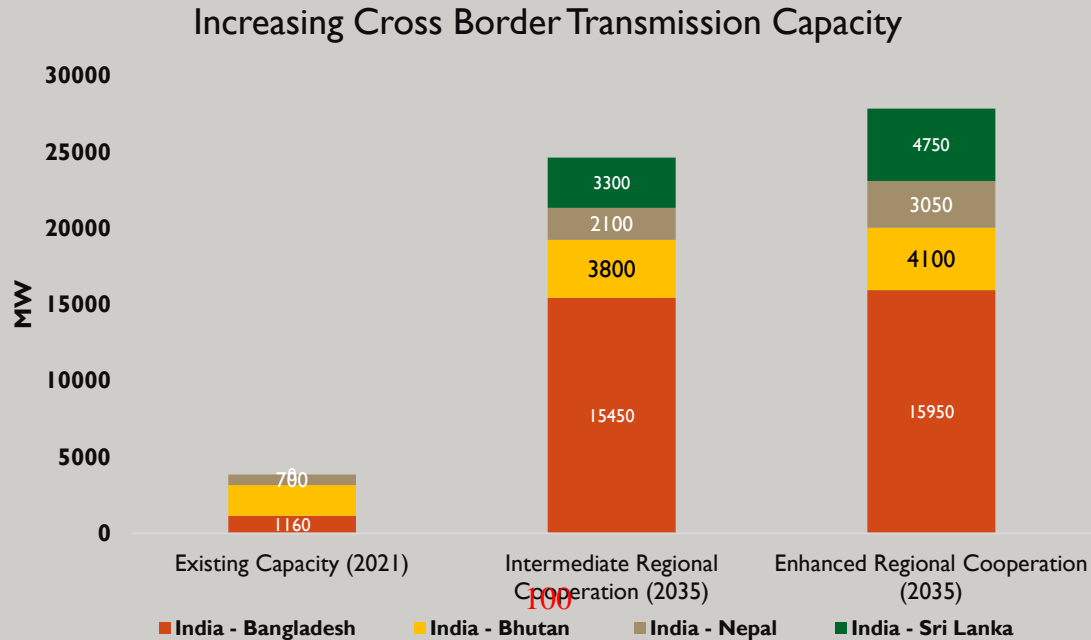
# 70% Utilization of Cross Border Transmission Capacity

Out of 8760 hours in 2019, enhancement of cross border transmission capacity yield benefits for **30 – 70%** hours in a year.



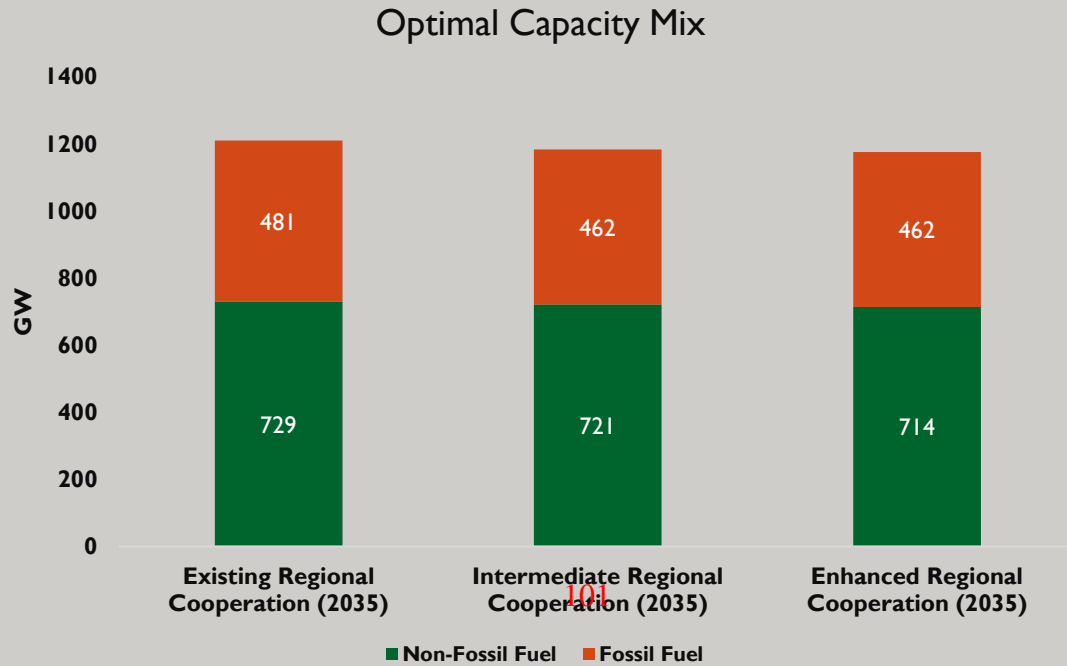
# Scaling Cross Border Transmission for Future Gains

To sustain and enhance cross border electricity trading by 2035, significant increments in inter country transmission capacity are required. This would facilitate optimal resource sharing to meet growing demand efficiently.



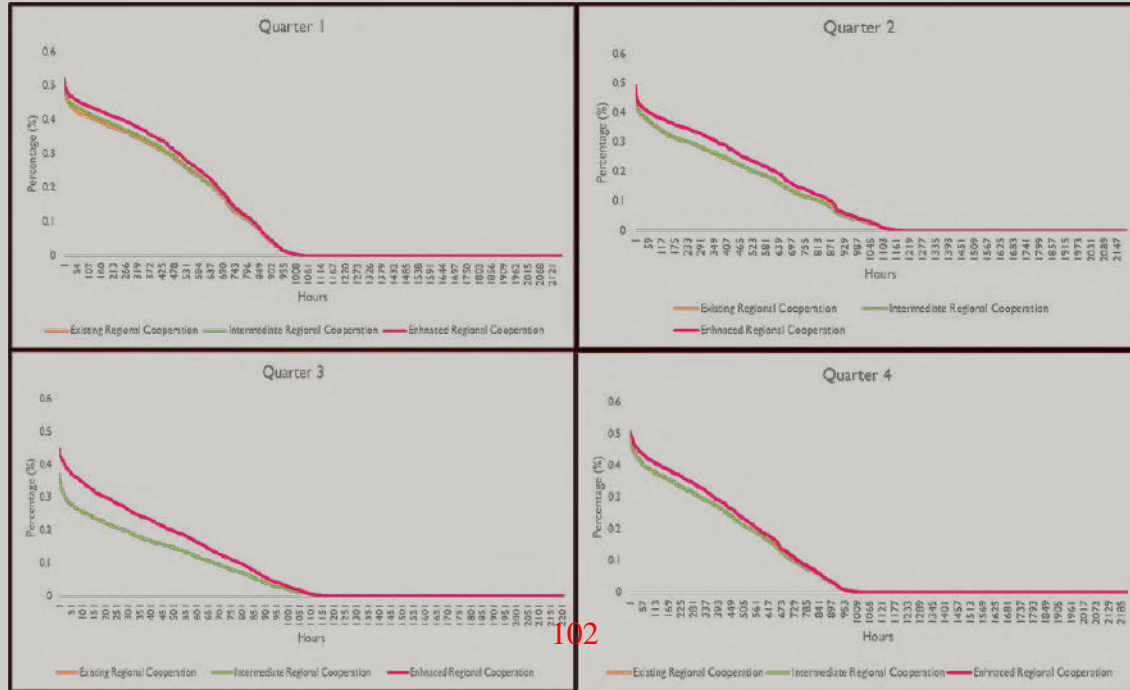
# Optimizing Capacity Mix through Regional Cooperation

Enhanced regional cooperation leads to a balanced and efficient capacity mix, reducing the need for excessive capacity additions. The strategic allocation of resources minimizes costs while meeting future demand.



# 35% Improvement of Capacity Credits of RE Generation

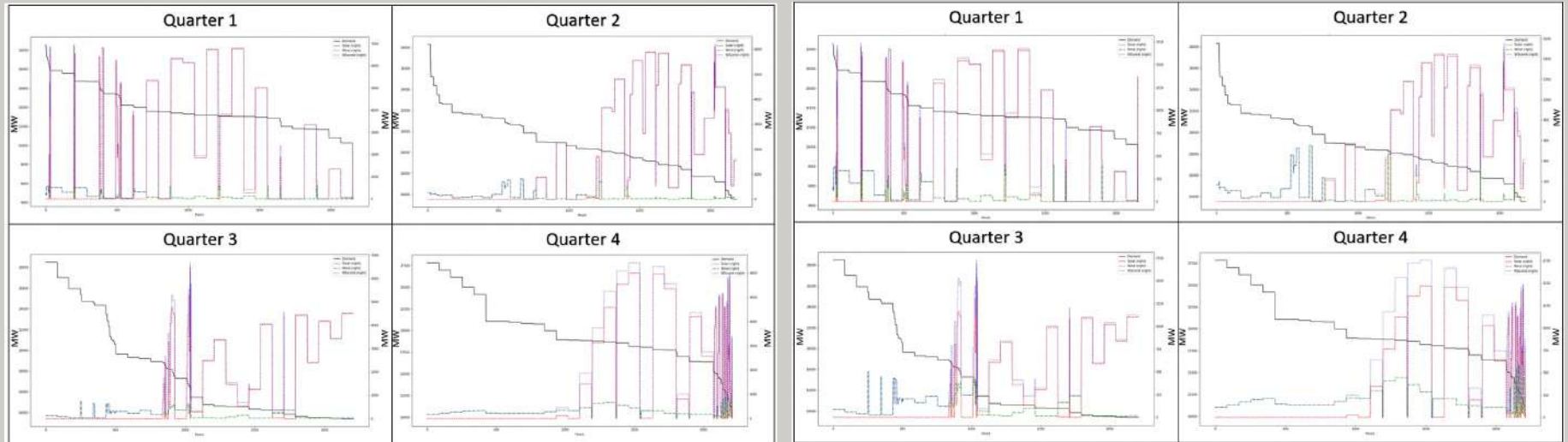
Regional cooperation leads to improvement in capacity credits of RE generation in the South Asian nations. For instance, capacity credits of Bangladesh in 2019 is **35%** higher with enhanced regional cooperation at different hours of the year.



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# Improved Capacity Credits over the years

Over the years, enhanced regional cooperation and increased renewable integration have significantly improved capacity credits across nations. For instance, capacity credits of Bangladesh in 2035 is **86%** higher with enhanced regional cooperation at different hours of the year.



Existing Regional Cooperation -  
Bangladesh



Enhanced Regional Cooperation -  
Bangladesh



# Ancillary Services Framework

# Need for Ancillary Services Market in BBINS

## Progress in BBINS so far

- ❑ Cross-border cooperation and sharing of resources in BBIN
- ❑ Energy exchange through traders and power exchanges

## Benefits of Cooperation

- 1 *Enhanced Grid Stability and Reliability (for better management of grid fluctuations)*
- 2 *Cost-Effectiveness (by reducing the need if each country to maintain large expensive reserve margins)*
- 3 *Efficient integration and utilization of Renewable Energy (by making it easier for nations to balance RE fluctuations more efficiently)*
- 4 *Enhanced Energy Security (facilitated through cross border sharing of reserves/ continuous power availability)*

# Framework for Cross Border Analysis

## 1. Assessment of requirement of ancillary services through a common methodology

- Forecasting and Demand Supply Balancing
- Standardized Frequency Metrics
- Collaborative Data Sharing
- Renewable Energy Integration

## 2. Procurement of ancillary services from neighboring nations

- Regional Ancillary Services Market
- Harmonized Grid Codes
- Utilization of Existing Frameworks
- Bilateral Agreements

## 3. Pricing of ancillary services for cross border trading

- Operating Costs
- Opportunity Costs
- Economic Valuation of Grid Stability
- Shadow Price



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# Annexure



# Scope of Work

- Review and analyze the current and future demand – supply positions of each South Asian country, including growth of renewables, for the next 15 years on a yearly basis
- Review and analyze the current daily load curve and generation patterns (including those of renewable energy) over different seasons in all South Asian countries and calculate the balancing cost per unit on account of intermittency of renewables and average cost of supply per unit in each country separately over the year.
- Review and analyze the existing market mechanism related to grid balancing in each country and the region and its associated policy, regulatory, legal and technical frameworks.
- Suggest a framework along with a roadmap and an action plan for implementation of the regional framework for ancillary services market in the region.



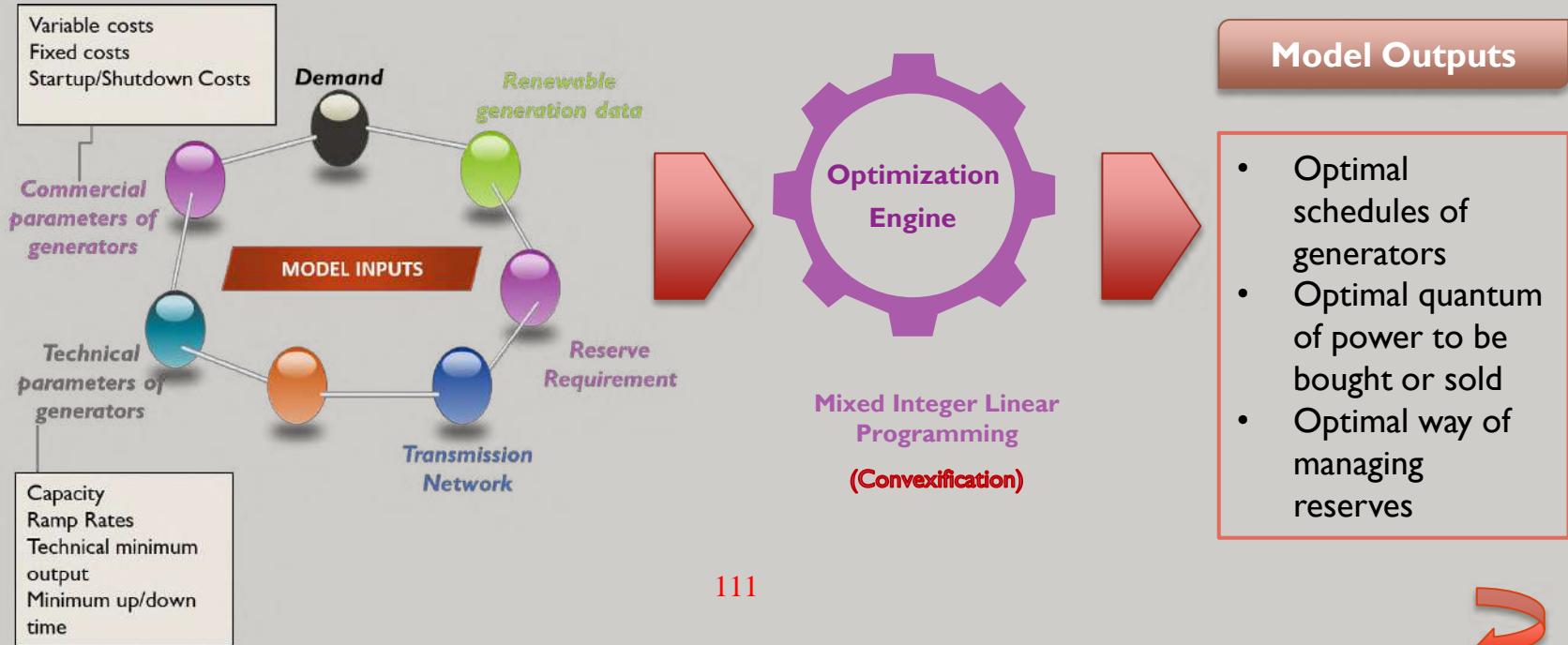
# Scenario Description

Scenario	Assumption on Inter Country Transmission Expansion Candidates	Assumption of Reserve Management
Existing Regional Cooperation	No Transmission Expansion	Local Management of Reserves for each zone
Intermediate Regional Cooperation	Transmission Expansion Candidates Considered	Local Management of Reserves for each zone
Enhanced Regional Cooperation	Transmission Expansion Candidates Considered 110	No restriction on import of reserves (100% Cross-Border Reserve Sharing)

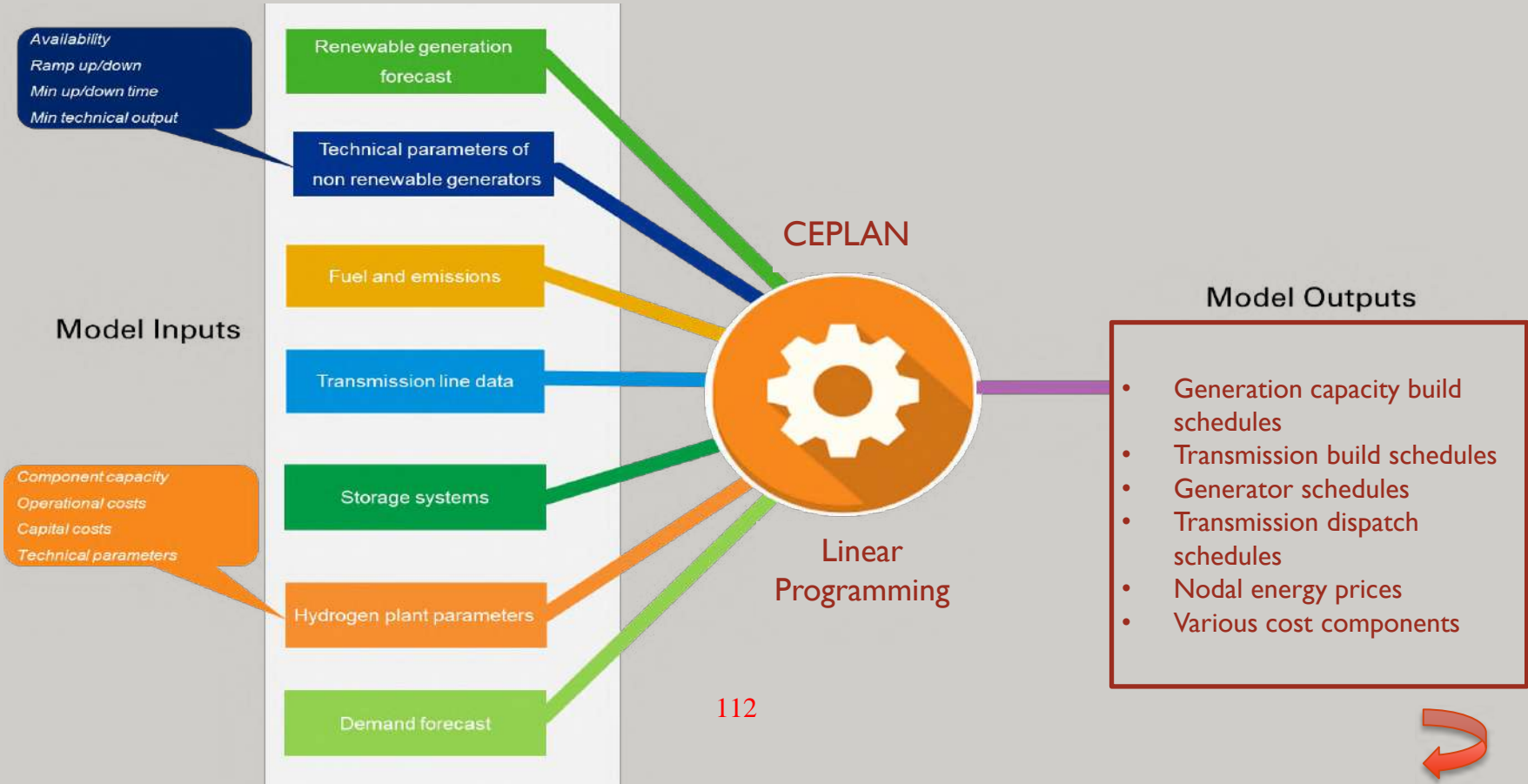


# Methodology – Unit Commitment Modelling for 2019

UCM runs for 10 days at a time, in a recursive dynamic way (where the final “state” of the power system for the previous day would be assumed as a “start point” for the following day), summing up to model runs for 8760 hours in a year



# Methodology – Capacity Expansion Modelling for 2021-2035

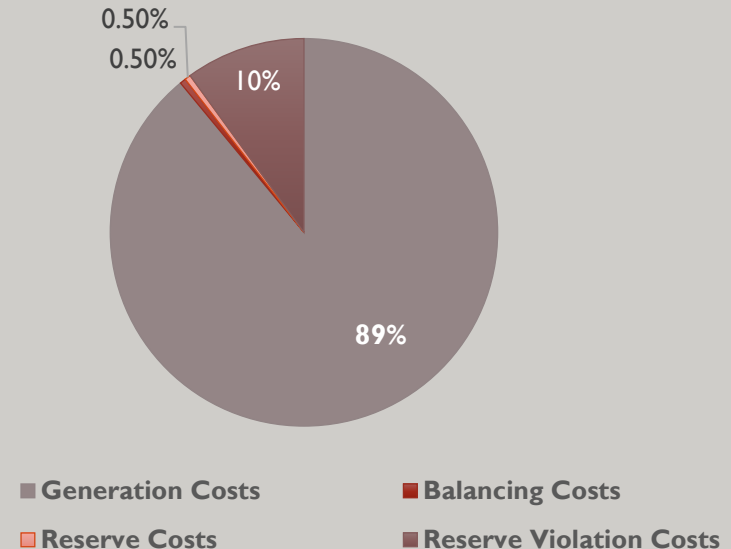


# Cost Components – Unit Commitment Modelling

The benefits of regional cooperation have been assessed in terms of variable costs of generation, balancing costs, costs of maintaining reserves and cost of reserve violations.

- **Generation Costs**
  - The variable costs per unit of production of energy.
- **Balancing Costs**
  - The startup and the shutdown costs of the generators.
  - Reduction in Energy Costs due to higher PLFs ( by lower SHR and auxiliary consumption)
- **Reserve Costs**
  - The costs incurred while maintaining a quantum of reserves.
- **Reserve Violation Costs**
  - The costs incurred for meeting the unmet reserves.

Contribution of Cost Components

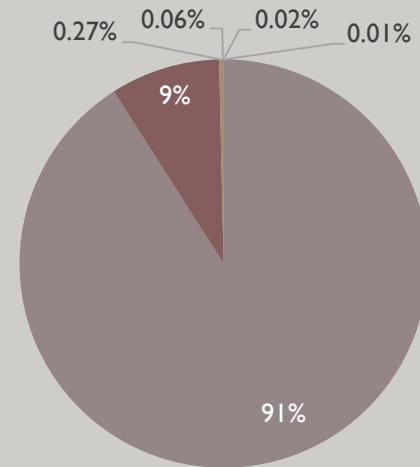


# Cost Components – Capacity Expansion Modelling

The benefits of regional cooperation have been assessed in terms of investment costs, variable costs of generation, balancing costs, transmission costs, costs of maintaining reserves and cost of reserve violations.

- **Capex Costs**
  - The cost in investing in new capacity/ scaling up existing capacity.
- **Generation Costs**
  - The variable costs per unit of production of energy.
- **Balancing Costs**
  - The startup and the shutdown costs of the generators.
  - Reduction in Energy Costs due to higher PLFs ( by lower SHR and auxiliary consumption)
- **Reserve Costs**
  - The costs incurred while maintaining a quantum of reserves.
- **Reserve Violation Costs**
  - The costs incurred for meeting the unmet reserves.
- **Transmission Costs**
  - The costs incurred while expanding the intercountry transmission capacity.

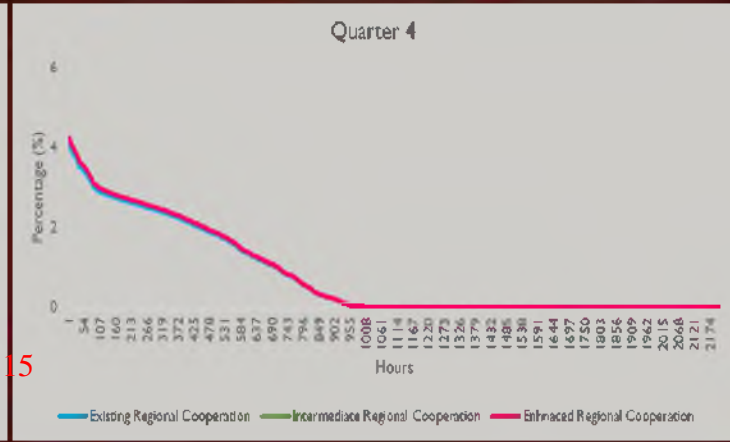
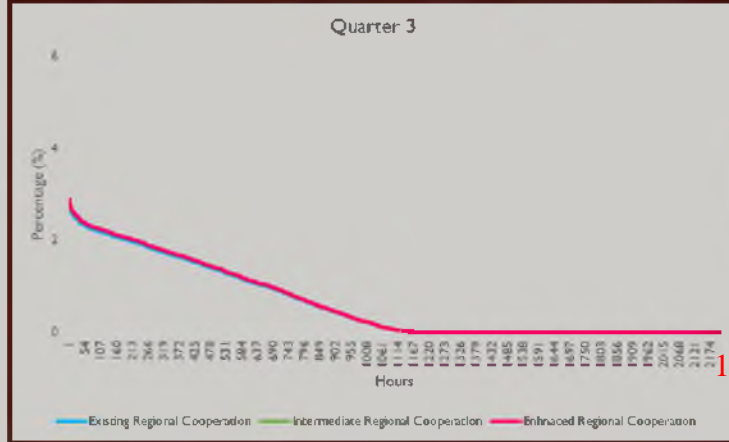
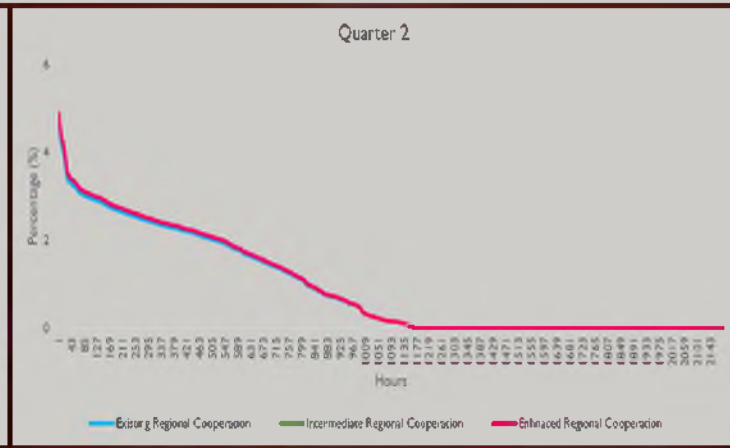
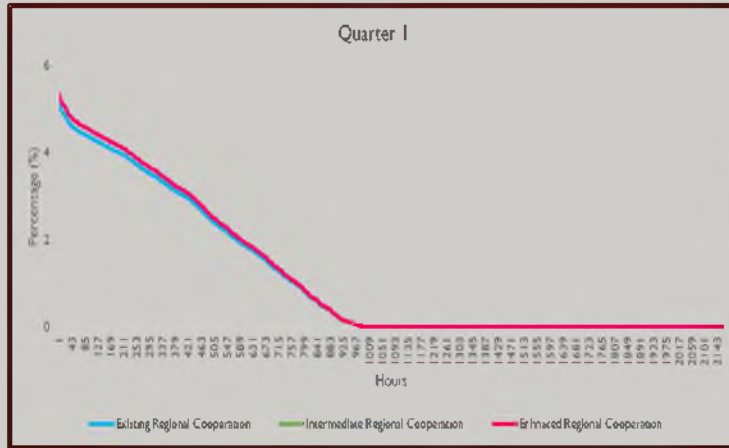
Contribution of Cost Components



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- Capex Costs
- Generation Costs
- Balancing Costs
- Reserve Costs
- Reserve Violation Costs
- Transmission Costs

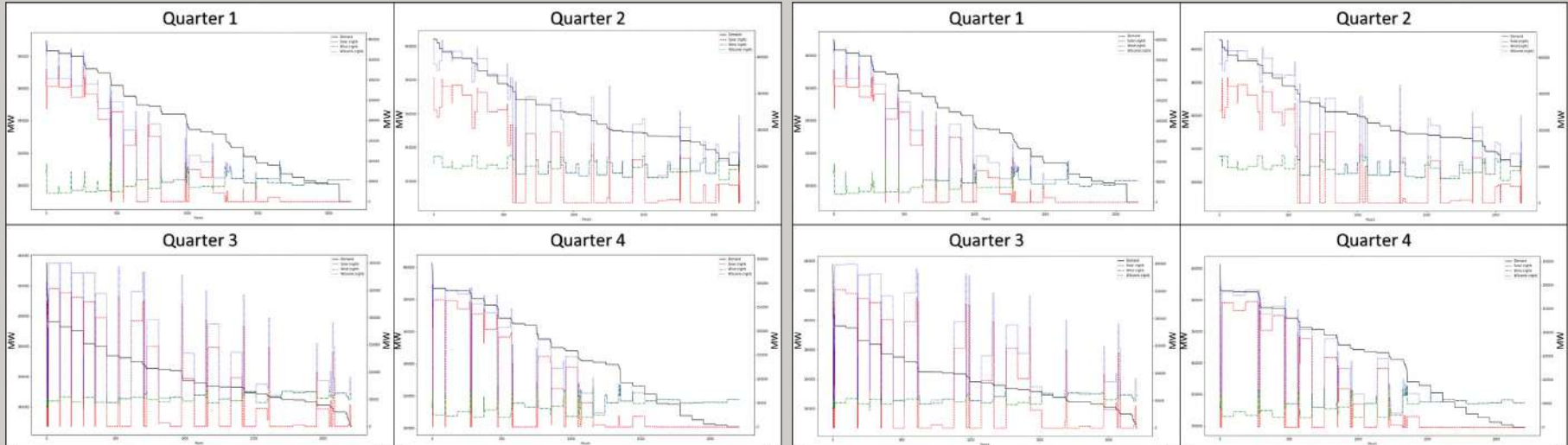
# Capacity Credits of Nepal – 2019



1.5

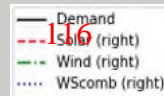


# Capacity Credits of India – 2035

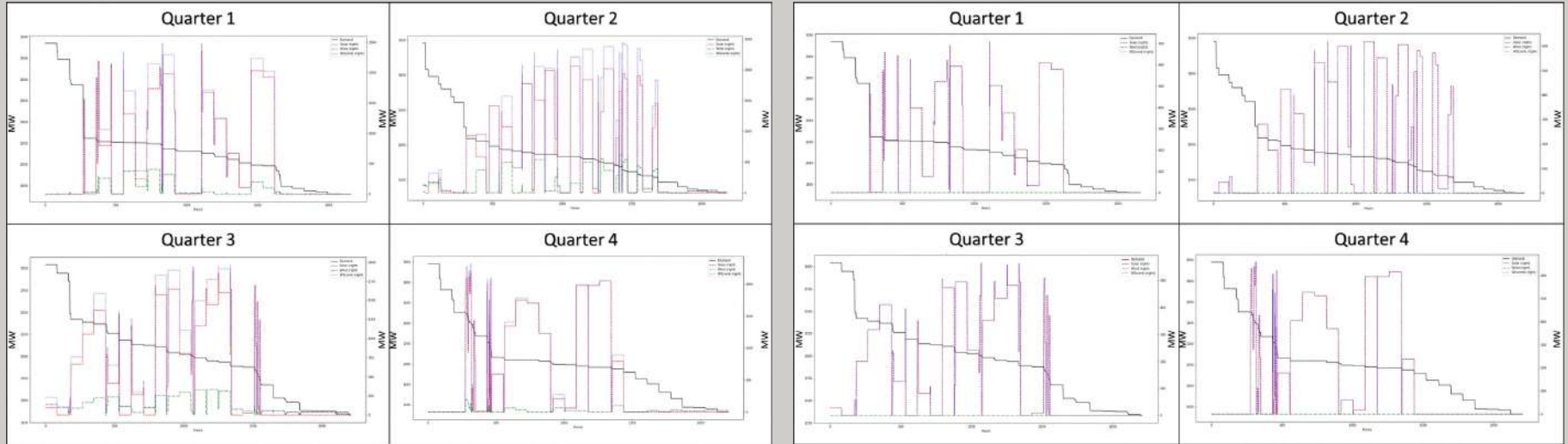


Existing Regional Cooperation -  
India

Enhanced Regional Cooperation  
- India



# Capacity Credits of Nepal – 2035



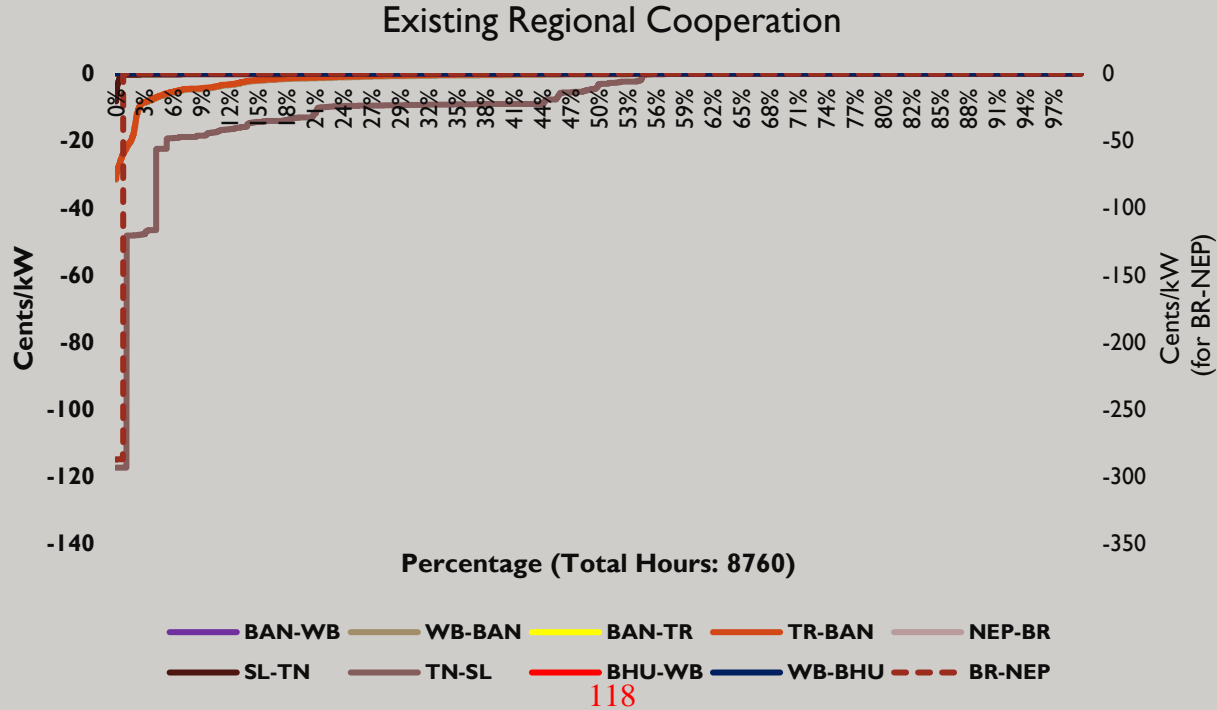
Existing Regional Cooperation -  
Nepal



Enhanced Regional Cooperation  
- Nepal



# Opportunity Value of Cross Border Transmission Capacity



# THANK YOU

FOR MORE INFORMATION AND UPDATES, VISIT THE  
SAREP WEBSITE : <https://sarepenergy.net>



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# South Asia Regional Energy Partnership (SAREP) Presentation

on

## SAFIR Working Group Proposals

- a) **Support Regulators in developing Model Regulation related to CBET (in countries that currently does not have CBET Regulations)**
- b) **Technical Assistance and Support to Regulators on enhancing Institutional Regulatory Capacity**

**27th SAFIR Executive Committee Meeting & 30<sup>th</sup> SAFIR Steering Committee Meeting**

**12<sup>th</sup> December, 2024 , New Delhi, India**

Presented by  
**Shri Rajiv Ratna Panda, Regional Energy Trade Lead, SAREP**

# Content

**01** → Support regulators in developing model regulation related to CBET  
(In countries that currently does not have CBET regulations)

*{Background, SWG Approved Proposal, Next Steps}*

**02** → Technical Assistance and support to Regulators on enhancing  
institutional regulatory capacity

*{Background, SWG Approved Proposal, Next Steps}*










# Support to SAFIR Regulators in developing Model Regulation related to CBET



# Background : Enabling CBET Policy & Regulatory Framework-Need for Harmonisation



Desirable Requirement for CBET	Afghanistan 	Bangladesh 	Bhutan 	India 	Nepal 	Pakistan 	Sri Lanka 
Regulations, legislations and policies directly related to Regional Energy Cooperation/Exchange, Cross Border Electricity Trade (CBET)							
Law (incl. export/import licensing)	✗	✗	✓	✗✓	✓	✗	✓
Policy	✗	✗	✓	✓	()	✗	✗
CBET Regulation	✗	✗	✗	✓	✗	✓	✗
Specific Regulations indirectly related to Regional Energy Cooperation/Exchange and Cross Border Electricity Trade & Electricity Market							
Power Market Policy, Regulations	✗	✗	✗	✓	✗	✓	✗
Open Access & Connectivity	✗	()	()	✓	()	✓	✗
Trading License (including import/export license)	()	✗	✗✓	✓	()	✓	✗
Grid Code	✗	✓	✓	✓	✓	✓	✓
Transmission Pricing	✗	✓	()	✓	✗	✓	()
Commercial Deviation Settlement	✗	✗	✓	✓	✗	✓✗	✗
Appellate Electricity Dispute Settlement Body	✗	✗	✗	✓	✗	✗	✗
	✓	Available	()	Partially Available	✗	Not Available	✗✓ Proposed



# Background : Market Based CBET Increasing



## Need for Further Regulatory Streamlining and Regional Electricity Market Development

Trend is to Rely on Competition & Market Instruments under Policy & Regulatory Oversight

Tapping Demand Diversity- Daily, Weekly, Monthly, Seasonal

Power Exchange-Competitive price discovery, Auction Platforms

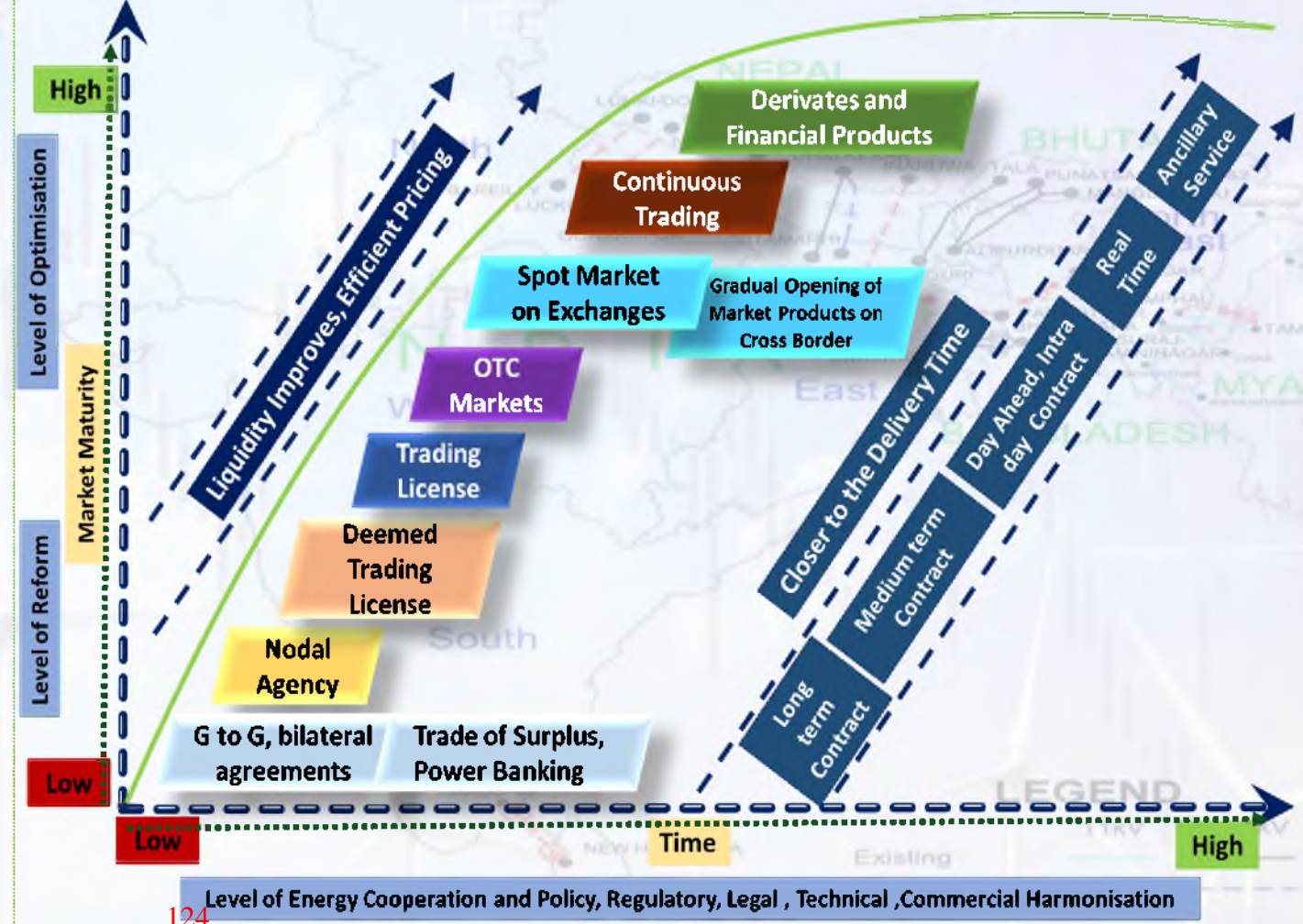
Portfolio of Product, Electricity (DAM, RT), Green (G-DAM, G-TAM), REC, ESCRTs

Emergence of Carbon Market, Resurgence of Carbon Credits

### Power Exchange Based CBET in South Asia (22% of CBET is through Power Exchange)



### Possible Phase of Power Market and Product Development



Source: Compiled by Author from various Sources. Raji- Ratna Panda/SAR/D/



# SWG Approved Proposal-Technical Assistant/Support to SAFIR Regulators in developing Model Regulation related to CBET



- ❑ Technical Assistance and Support to SAFIR country regulators in developing **Country Specific Model Regulation related to Cross Border Electricity Trade (CBET)** in countries that currently **don't have CBET Regulations/Procedures/Frameworks**.
- ❑ Nature of support could be
  - ❑ **Technical Resource/Expert Support in drafting/developing model regulation** related to CBET.
  - ❑ Technical Activities/Support for **Implementing the recommendations of the SAFIR Working Group Study** on South Asia Energy/Electricity Regulations to Develop Regulatory Pathway/Road Map for Electricity/Energy Exchange and Energy Cooperation (EC) in SA.
  - ❑ **Knowledge and Experience Sharing of Best Practices** in the above context of **developing CBET Regulations** both from inside the region and outside of the region.



**Fourth Meeting of SAFIR Working Group (SWG) held on 14th and 15th February 2023, Kathmandu Marriott Hotel, Kathmandu, Nepal **Approved the above****



Approved Minutes of the 4<sup>th</sup> meeting of SWG



1. As next step, the above to be presented in the SAFIR ECM for their concurrence.
2. **Upon the concurrence of SAFIR ECM, SAREP to implement the activities.**

Next Steps

Upon approval, SAREP to initiate the process of engagement for providing Technical Resource/Expert Support to Draft Model CBET Regulations in consultation with relevant SAFIR member Countries and report on the progress to SAFIR Secretariat



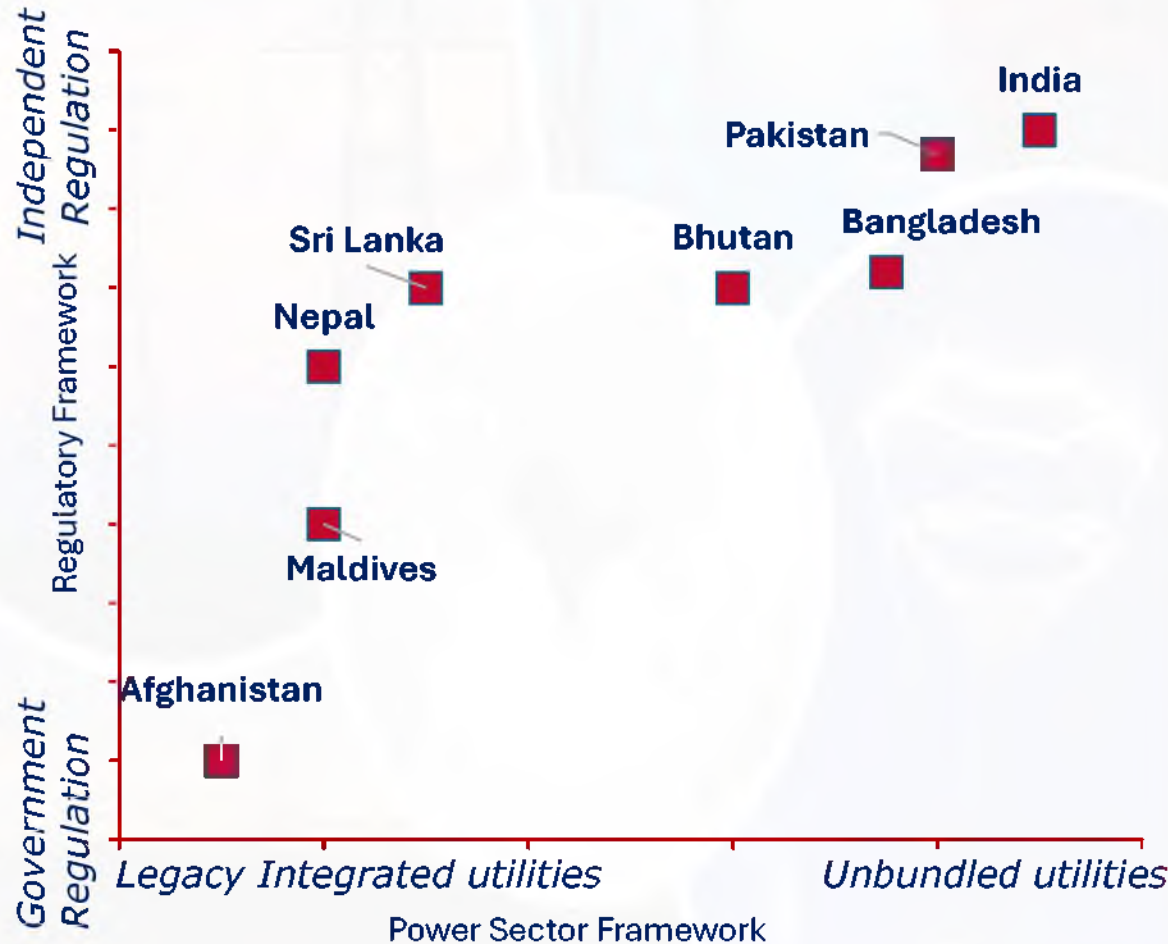
# Technical Assistance and support to Regulators on enhancing the Institutional Regulatory Capacity



# Background : Varied Level of Sector Evolution, Market Development : Harmonize through Consensus

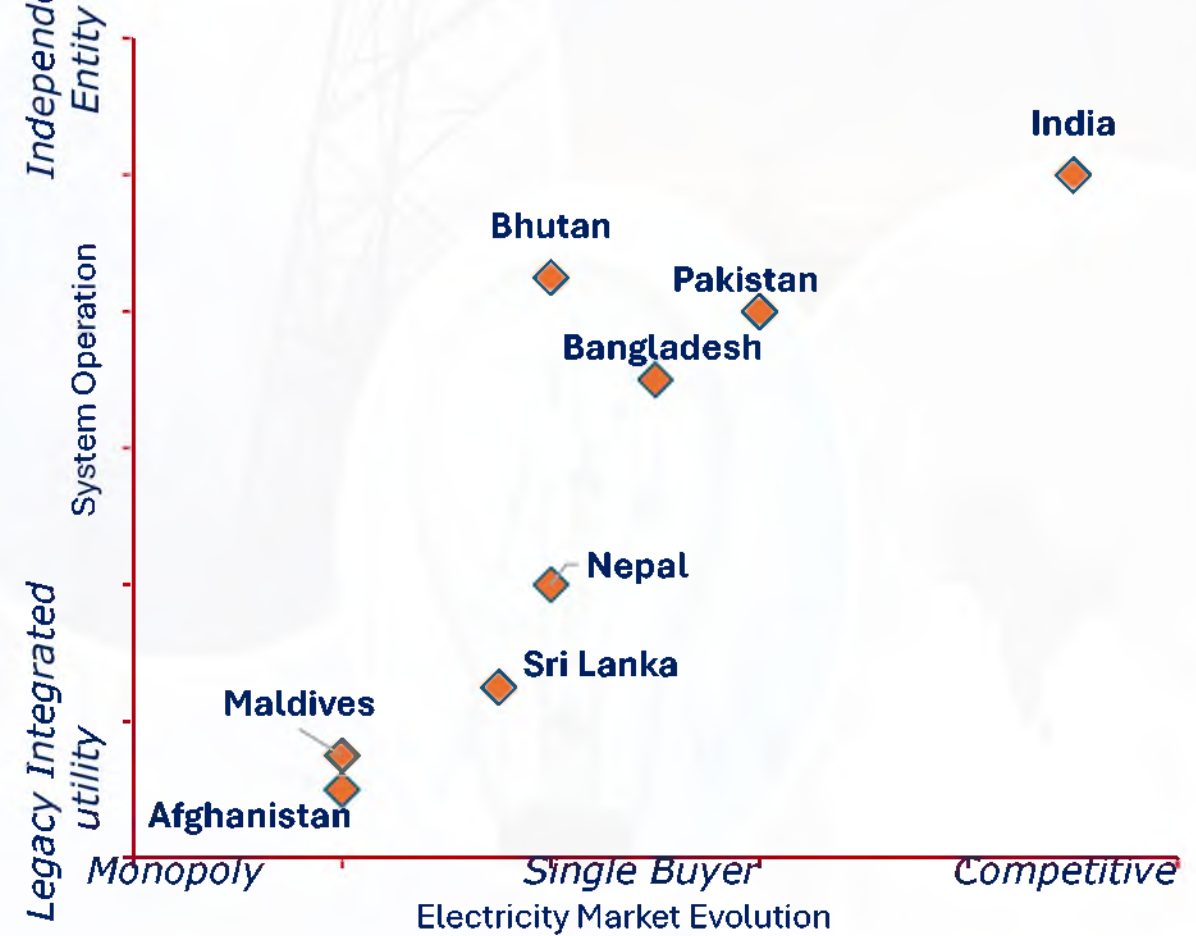


## Power Sector and Regulatory Frameworks



\* Includes subjective interpretations

## Market Evolution and System Operation



\* Includes subjective interpretations

**Develop a Common & Shared Regulatory Vision on CBET, Promulgating CBET Specific Regulations and Harmonise Regulation through Consensus Building**  
**Continuous and Customised Support to SAFIR Regulators to improve Institutional and regulatory Capacity on CBET**



# SWG Approved Proposal- Technical Assistance and support to Regulators on Enhancing Institutional Regulatory Capacity



- Capacity Buildings areas identified by SAFIR Working Group studies such as Regulatory Interventions for Grid Discipline and Grid Reliability (GDR) study in the South Asian Region and **Study Recommendations should be followed upon for Implementation.**
- Member from Bhutan, Sri Lanka, and Bangladesh in particular, highlighted **Country Specific Institutional Regulatory Capacity Building Program** with implementation feature by SAREP will be very helpful for advancing the cause of regional energy cooperation and CBET considering the different level of regulatory evolution at the level of regulatory institution in SA.



Fourth Meeting of SAFIR Working Group (SWG) held on 14th and 15th February 2023, Kathmandu Marriott Hotel, Kathmandu, Nepal **Approved the above**

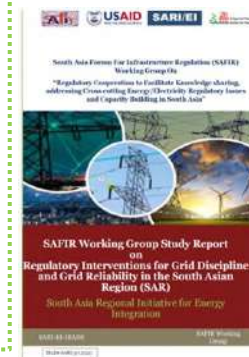


Approved Minutes of the 4<sup>th</sup> meeting of SWG

- As next step, the above to be presented in the SAFIR ECM for their concurrence.
- Upon the concurrence of SAFIR ECM, SAREP to implement the activities.**

Suggested specific technical capacity building measures by the Regulatory Interventions for Grid Discipline and Grid Reliability (GDR) Report

- Power system simulation exercise.
- Formulation of **incentive/penalty provisions for promoting grid discipline.**
- Training program on **international best practices in transmission system planning.**
- Strengthening standards for **system safety and grid connection.**
- System protection - best practices and enforcement regulations.**



- Balancing the grid - ancillary services.**
- Strengthening of **outage management.**
- Information and communications technology – best practices** and implementation.
- Capacity building on **regulatory framework for cyber Security.**
- Capacity building on assessment of **investments in GDR, for disclosure of GDR** related information to general public.

Next Steps

Upon approval, SAREP to develop a **Cross Border Electricity Trade (CBET) Regional and Country Specific training and Capacity Building Plan** including the **Flagship Training Programs** in close consultation with SAFIR Member Country Regulators and Implement the same

# Thank You



“

Change is inevitable, but  
transformation is a choice.

HEATHER ASH AMARA

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“It always seems  
impossible until  
it's done.”

- Nelson Mandela

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