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# South Asia Regional Initiative for Energy Integration (SARI/EI)

## Overview and Update of SARI/EI activities 5<sup>th</sup> meeting of Task Force-3

By

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**16<sup>th</sup> January ,2018**

**Colombo, Sri Lanka**





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# Overview SARI/EI Program: South Asia Regional Initiative for Energy Integration (SARI/EI)

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● SARI/EI is a long standing program of USAID started in the year 2000.

● Program has consistently strived to address energy security in South Asia by focusing

- 1) Cross Border Energy Trade
- 2) Energy Market Formation and
- 3) Regional Clean Energy Development.

● SARI/EI–Phase IV (2012-2017): Key Outcomes.

Three Key Development Outcomes:

1. *Coordinate policy, legal and regulatory issues.*
2. *Advance transmission interconnections.*
3. *Establish South Asia Regional Electricity Markets.*

● Demand Driven ‘Bottom Up’ Approach

● IRADe, a regional organization, is implementing partner





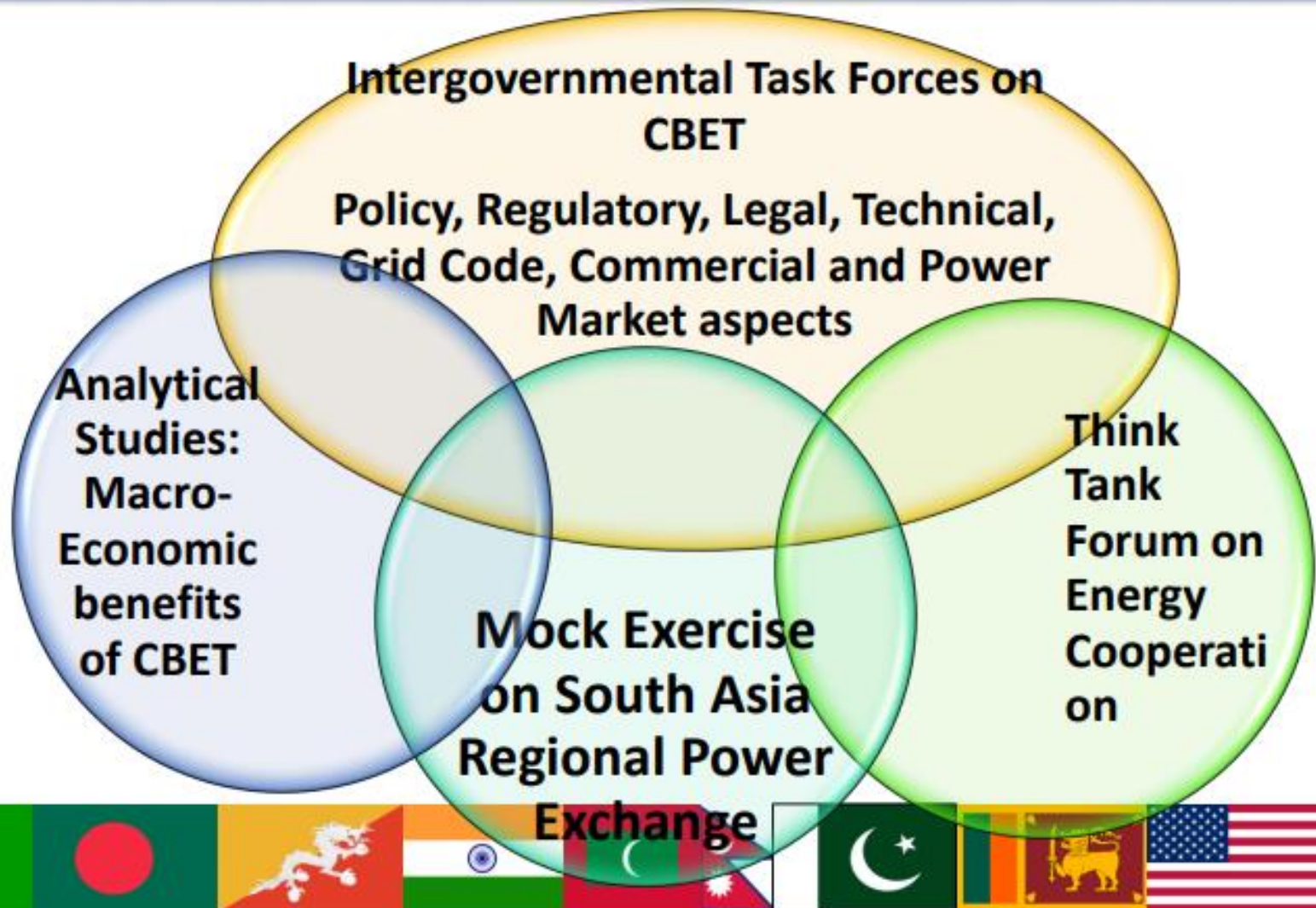
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Integrated Research and  
**IRADe** Action for Development

## SARI/EI: Various Streams of Work

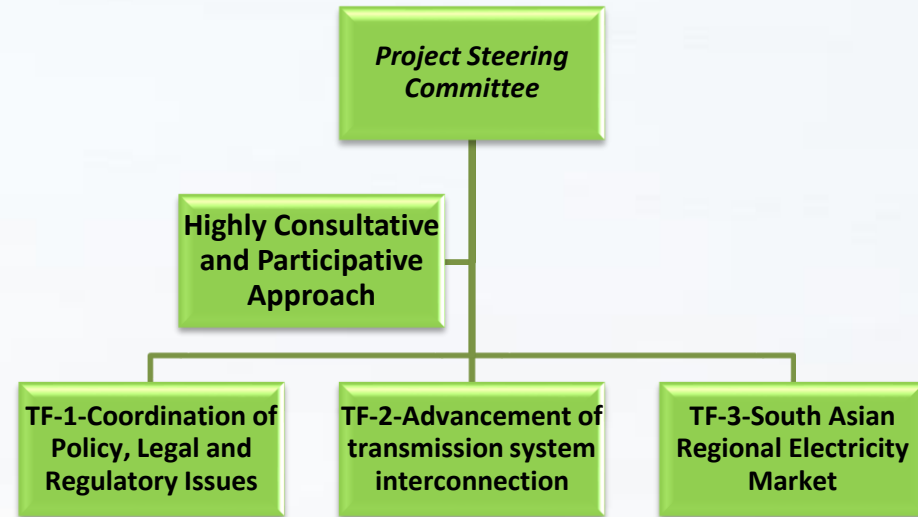


# SARI/EI Framework

**Project Steering Committee (PSC)** is the apex body of the program and provides overall strategic directions.

PSC members consist of **Senior level officials from the country governments, SAARC, ADB, Independent Energy Experts/Diplomats.**

Task Forces are **represented by Government Nominated members of level of Directors/Chief Engineers/Members etc. from Utilities, Regulators, planners, Power Exchanges of SA countries.**



➤ **TF1: Coordination of Policy, Legal and Regulatory issues**



➤ **TF-2: Advancement of transmission system interconnection**



➤ **TF 3: South Asian Regional Electricity Market**



# SARI/EI Framework

SARI/EI/IRADe (Secretariat)

Project Steering Committee

## TASK FORCE LEADERS

-  **AFGHANISTAN**  
MEW, DABS
-  **BHUTAN:**  
MoEA
-  **BANGLADESH**  
MPEMR, BERG, PGCB
-  **INDIA:**  
CEA, CERC, PTC, IEX
-  **NEPAL**  
NEA, MoE
-  **PAKISTAN**  
NEPRA, NTDC
-  **SRILANKA**  
MPRE, CEB

## International Consultants

- Deloitte, KMPG
- PRDC, PWC, ICF
- Mercados, E & Y

Task Force-1 Coordination of Policy, Regulation and Legal frameworks

Task Force-2 Advancement of Transmission Interconnection Technical Studies

Task force-3 South Asia Regional Electricity Markets

Macro-Economic Benefits of Cross Border Electricity Trade (CBET) Analytical Studies

## Task Force Recommendations/Outputs

- Regional Regulatory Guidelines;
- Suggested Amendments in Electricity Laws, Regulations and Policies;
- Regional Investment Framework; Model CBET-Power Market Regulation;
- Trading Potential; Harmonization of Grid Codes, Operating Procedures;
- Model framework for Open Access and Trading License Regime;
- Model PPAs/TSAs, Mock Exercise for Regional Power Exchange (SARPEX)

## Findings: Macro-Economic Benefits of CBET

- India-Nepal CBET
- India-Bangladesh CBET

## Synthesis, Consensus, Outreach and Dissemination

## THINK TANK FORUM

Policy Advocacy, Media Engagement, Quantifying Impacts

- Policy Makers, Politicians
- Ambassadors and Diplomats
- Civil Society, Research Institutions
- Task Force Members, Power Utilities

- CBET :Linkages with Climate Change and Sustainable Development Agenda in South Asia
- CBET : Linkages with Energy Access and Gender


## Demand Driven Studies /Exercises to Achieve the Deliverables of Task Forces as Defined in the Terms of Reference of Task Forces

A green arrow pointing right, containing a stack of books.

**TF-1 :**

1. **Study -1: Study on Review of policies, regulations and laws, preparation regulations etc.**

2. **Study-2: Study on Investment policies/guidelines for SA**

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**TF-2 :**

1. **Study 1: Study to find out the Trading Potential of South Asian Countries**

2. **Study 2: Harmonization of Grid Codes**

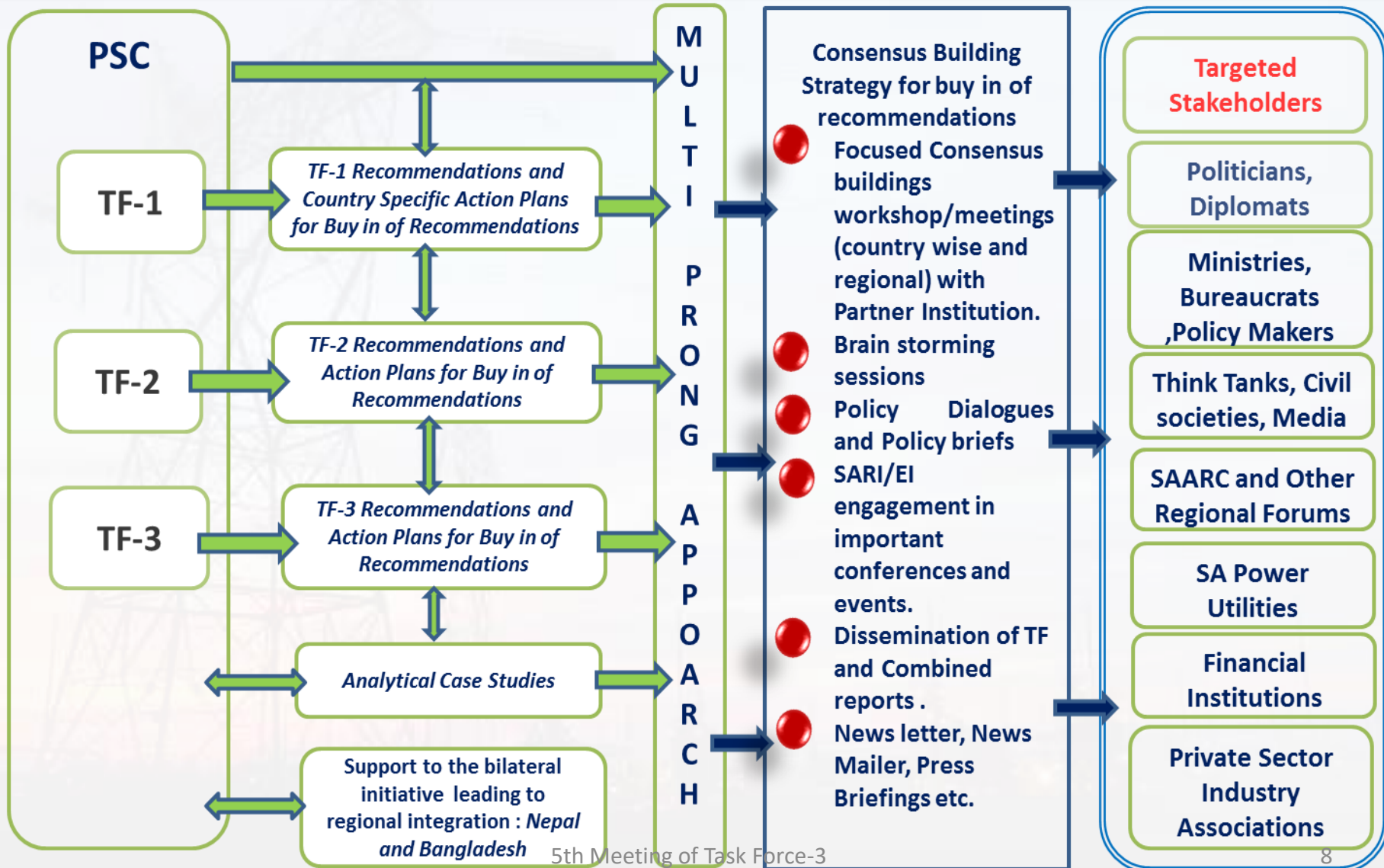
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**TF-3 :**

1. **Study 1: "Assessment and recommendation of commercial terms & conditions for Cross Border Electricity Trade (CBET) and suggesting the model Of Power Exchange in South Asian region"**

2. **Study 2: SARPEX-Pilot Mock Exercise**

**SARI/EI -Consensus Buildings Framework and Program Outreach : Approach and Strategy**



5th Meeting of Task Force-3



## THINK TANK FORUM FRAMEWORK

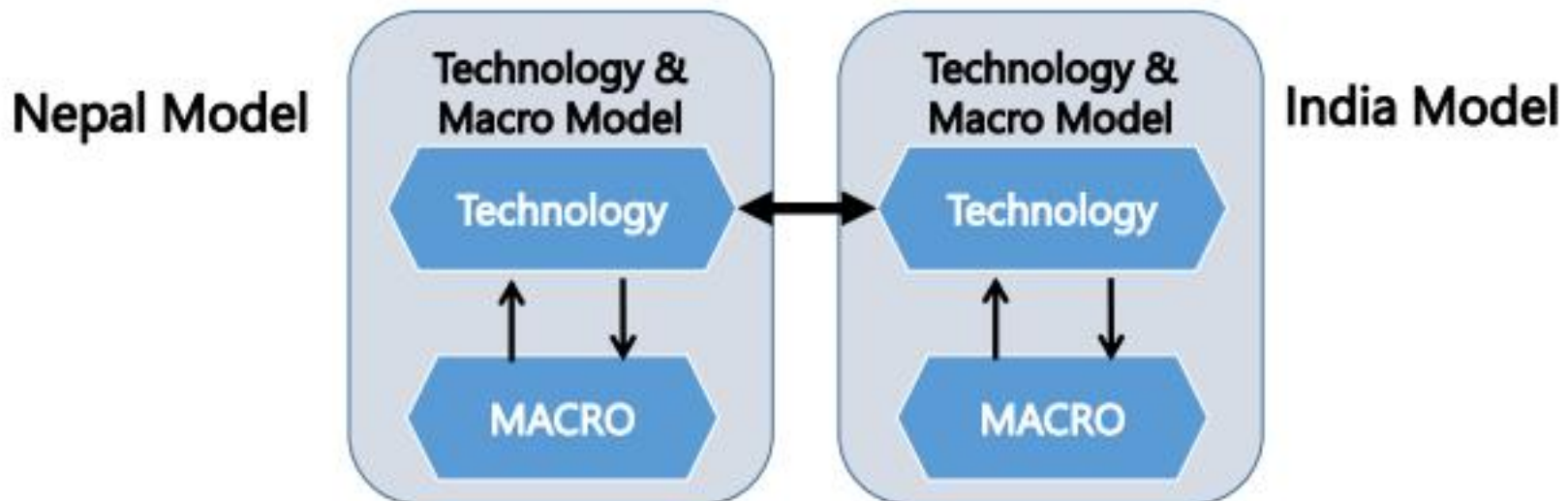


### Key objectives identified for the SARI/EI Think-Tank Forum:

- A network of leading think tanks in each participating South Asian country
- To initiate a discourse on the role of CBET in addressing energy demands for socio-economic development
- To establishing narratives and examples of the relevance of CBET in the energy security and climate change discourses
- TTF to take these messages to the stakeholders in respective nations
- Countries in focus: Bangladesh, Bhutan, Pakistan and Nepal

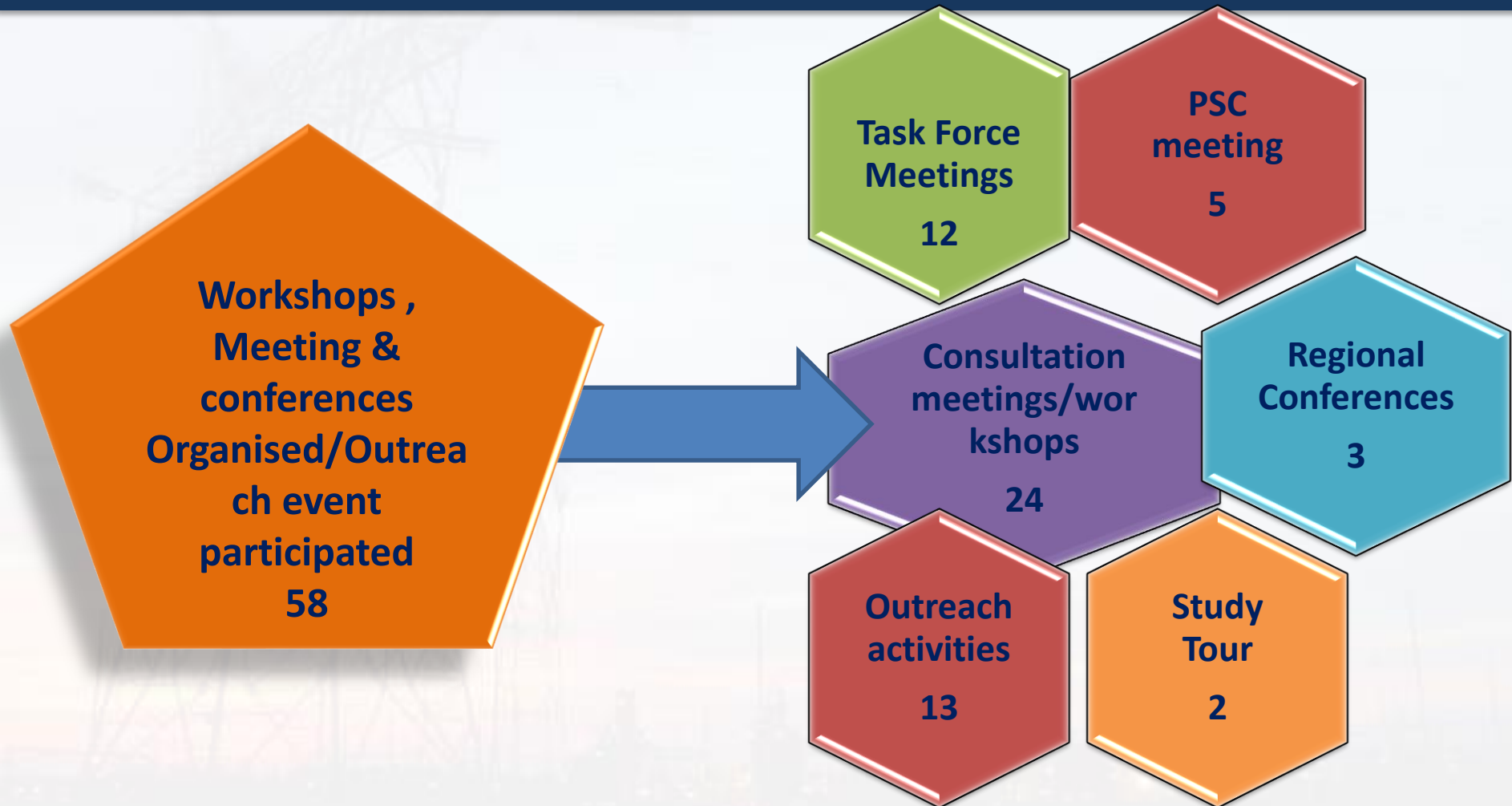
## Analytical studies : Modelling Nepal India Trade – Economic Benefits Important to Build Consensus

- Power trade on mutually agreeable terms- quantity, price and time
- Four sub models – Macro model for each country and detailed power technology model for each country which balances power demand supply on an hourly basis
- 40 year time horizon
- Iterations give a consistent result – Resources to invest, impact on growth and electricity demand, surplus for trade etc.



# Consultative Process

## Continuous Engagements and Interactions- Workshops ,Meeting & conferences



## Major Publications

- 1) South Asian Regional Power Exchange ( SARPEX) road-map
- 2) Model Power Purchase Agreement for Cross- Border Electricity Trade in South Asia.
- 3) Model Transmission Service Agreement for Cross- Border Electricity Trade in South Asia.
- 4) Report on Analytical Study on Economic Benefits from Nepal-India Electricity Trade.
- 5) Report on Analytical Study on Economic Benefits from Bangladesh-India Electricity Trade
- 6) Impact of Cross Border Electricity Trade on Bhutan
- 7) Back ground paper on “Prospects for Regional Cooperation on Cross-Border Electricity Trade in South Asia”
- 8) Concept Paper on “Cross Border Electricity Trade in South Asia: Investment Challenges and Opportunities”
- 9) Background Paper on “Cross Border Electricity trade in South Asia: Key Policy, Regulatory Issues/Challenges and the way forward “
- 10) Regional Regulatory Guidelines.
- 11) Suggested Changes/ Amendments in Electricity laws, Regulation and Policies of SA countries for Promoting CBET.
- 12) Harmonization of Grid codes, Operating Procedures and Standards to facilitate/promote Cross-Border Electricity Trade in the South Asia Region Framework Grid Code Guidelines

# Stakeholders Involved or Consulted

## Wide Range of Stakeholders Involved

1. Ministry
2. SAARC & BIMSTEC
3. Policy Makers
4. Regulators
5. Private sector
6. Diplomats/ Ambassadors
7. ADB/World Bank





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**IRADe** Integrated Research and Action for Development

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**LEARNINGS FROM NORD POOL REGION: Power Market Development**

**Suggested Changes/Amendments**  
In Electricity Laws, Regulations and Policies of South Asian Countries for Promoting Cross-Border Electricity Trade in the South Asian Region  
(TF-4 Report)

**SOUTH ASIA REGIONAL INITIATIVE FOR ENERGY INTEGRATION (SARI/EI)**

**Roadmap for South Asian Regional Power Exchange (SARPEX)**

SOUTH ASIA REGIONAL INITIATIVE FOR ENERGY INTEGRATION (SARI/EI)

**POWER PURCHASE AGREEMENT**  
for Cross-Border Electricity Trade (CBET)  
Between Seller (New Hydro Generator) & Procurer

**SOUTH ASIA REGIONAL INITIATIVE FOR ENERGY INTEGRATION (SARI/EI)**  
Task Force-3 Report

**South Asian Countries Power Pricing Mechanism & Recommendation for CBET**

**Transmission Service Agreement**  
for Cross-Border Electricity Trade

**SOUTH ASIA REGIONAL INITIATIVE FOR ENERGY INTEGRATION (SARI/EI)**  
Task Force-3 Report

**REGIONAL REGULATORY GUIDELINES**  
PROMOTING CROSS-BORDER ELECTRICITY TRADE IN SOUTH ASIA

SOUTH ASIA REGIONAL INITIATIVE FOR ENERGY INTEGRATION (SARI/EI)  
Task Force-1 Report





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# Thank You

