



South Asia Regional Energy Partnership (SAREP)

Presentation

on

Draft Terms of Reference (TOR) of the Knowledge Study

on

“Learnings from International Experiences on undertaking Electricity Market Reforms, its role in Electricity Market Integration, Development of Regional Electricity Market, and develop Regional Electricity Market Vision for South Asia”

Session 3: Updates on the planned Interventions of the SAREP Task Force-3 on “South Asia Regional Electricity Market”

11th Meeting of SAREP Task Force-3 on “South Asia Regional Electricity Market”
15.30 -16.00 Hrs., 11th October 2023 ,The Maitland State Room, Mount Lavinia Hotel, Colombo, Sri Lanka

Presented by
Rajiv Ratna Panda, Power Market Specialist, SAREP



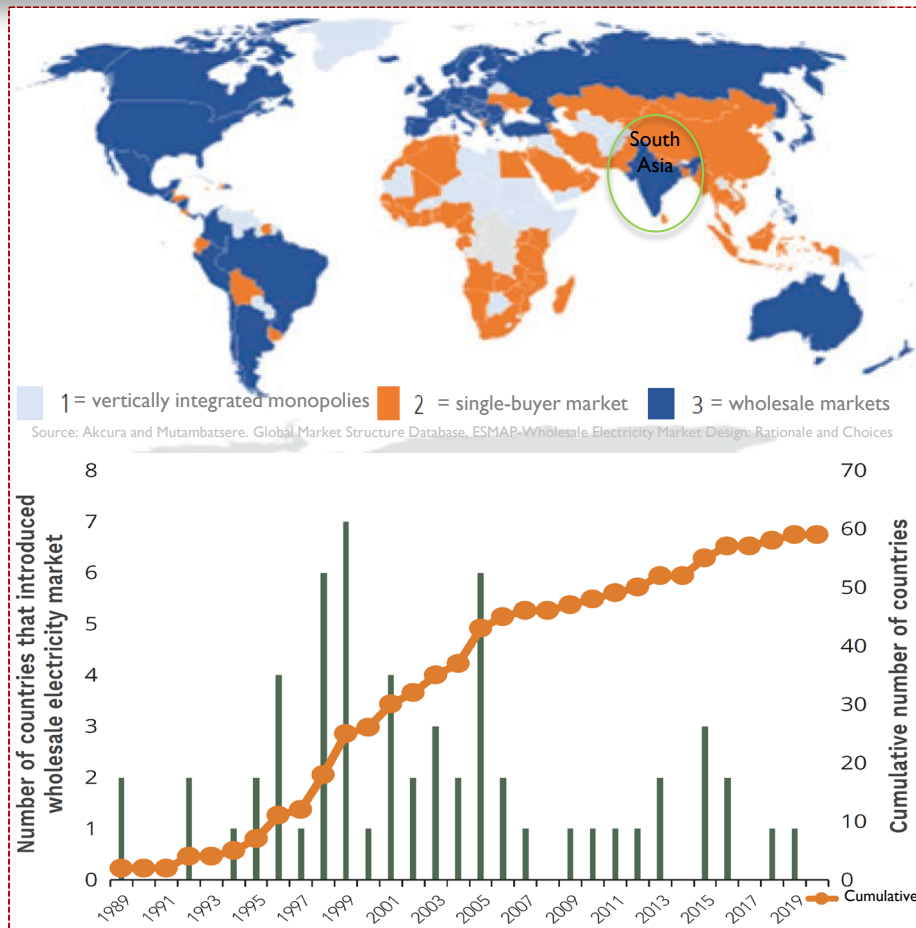
USAID
FROM THE AMERICAN PEOPLE

Content

- 01** → Background and Context
- 02** → Objective of the Knowledge Study
- 03** → Draft Terms of Reference of the Knowledge Study
- 04** → Timelines

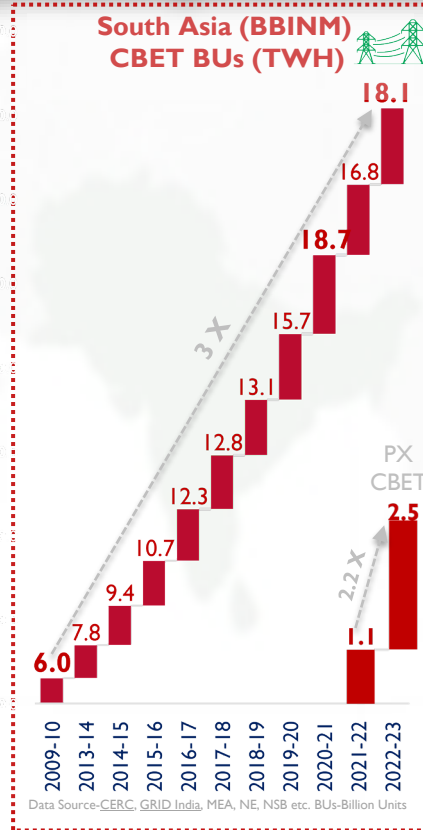
- ❖ Barely **3 decades ago**, it became feasible to introduce advanced, bid-based electricity markets compatible with the physical operation of a power system.
- ❖ Today, **around 60 countries** have power systems with competitive cost- or bid-based wholesale markets.
- ❖ These include most countries in **Americas, Europe, Australia**, a growing number of countries in **Asia** including India, Japan, the Philippines, Singapore, and South Korea.
- ❖ **Interest in creating electricity markets** also arises from the examples offered by **power pools that interconnect electricity systems across borders to enable electricity trade & the sharing of reserves.**

Source: ESMAP-Wholesale Electricity Market Design: Rationale and Choices. 2022



South Asia (SA): Background and Context

- ❖ Energy & Power System are undergoing **Transformation** due to various Socio-economic, Climate Change, and Energy Security concerns, from **Global Grid to Prosumers**.
- ❖ Electricity Markets around the globe are continuously being improved with new design and products .
- ❖ While CBET has increased in South Asia, potential remain large.
- ❖ Though not a prerequisite, It is desirable to have some level of electricity market reform (EMR) to have optimal regional electricity market (REM) development.
- ❖ Regional Vision/Framework are seen in other regional grids such as in Europe as the **building block for sustainable REM development**.
- ❖ In South Asia there it is desirable to have a **collective and shared vision for Regional Electricity Market Development**.



South Asia- Where it Stands in CBET

Southern Africa



9 TWh

Europe

427 TWh



ASEAN

49 TWh



South Asia

19 TWh



Renewable (%) in Electricity Capacity

Europe- 45 % | South Asia-38 %

ASEAN-34% | SAPP-30 %

Regional Vision/Policy/Planning/Regulation

Europe- Yes | South Asia- No

ASEAN-Yes | SAPP- Yes

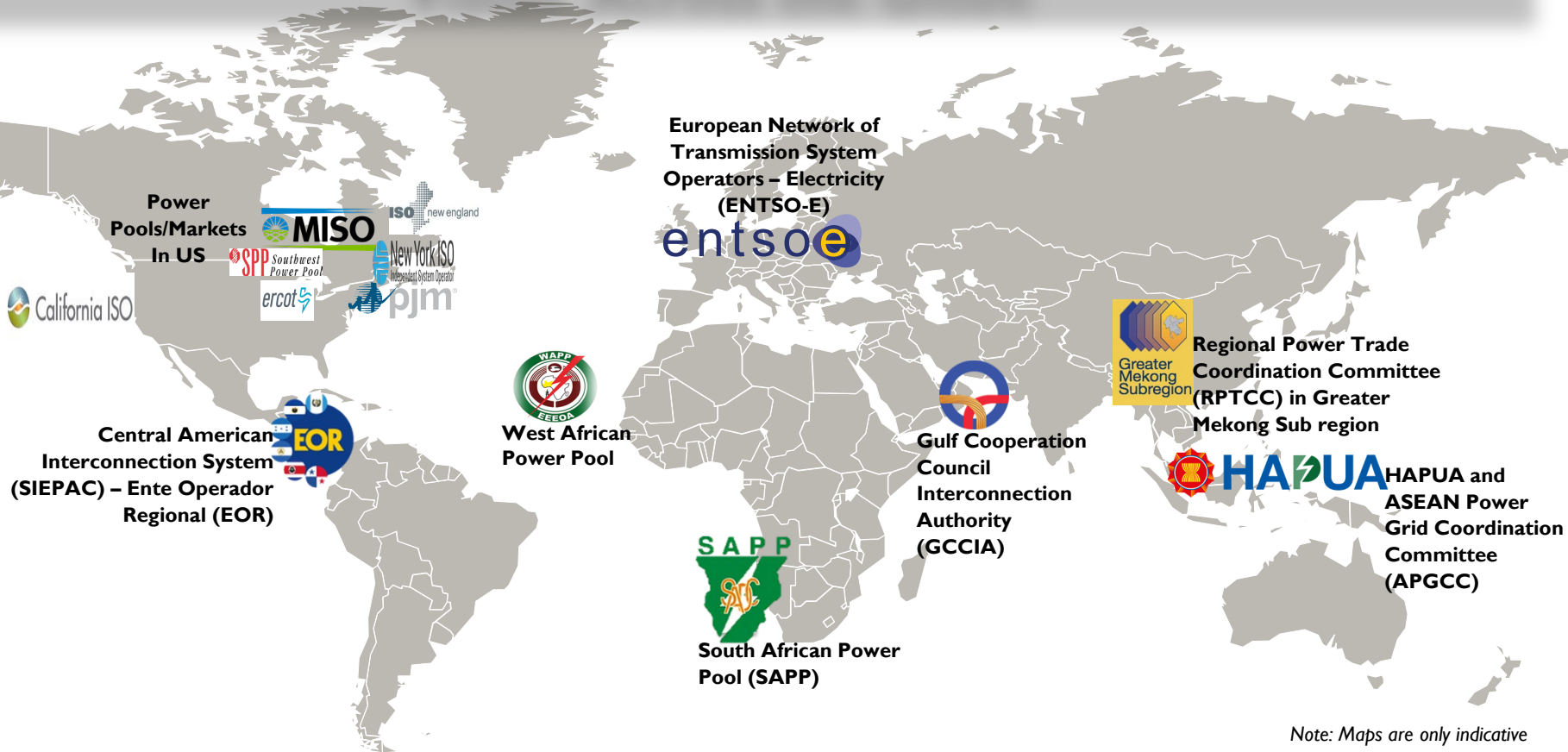
Regional Electricity Market

Europe-Yes | ASEAN-No | South Asia-No | SAPP-Yes

Source : Terawatt-hour (TWh) | SAPP AR-2020 | ASEAN | EUROPE | South Asia

A collective and shared vision for Regional Electricity Market Development in South Asia could be helpful to advance market integration

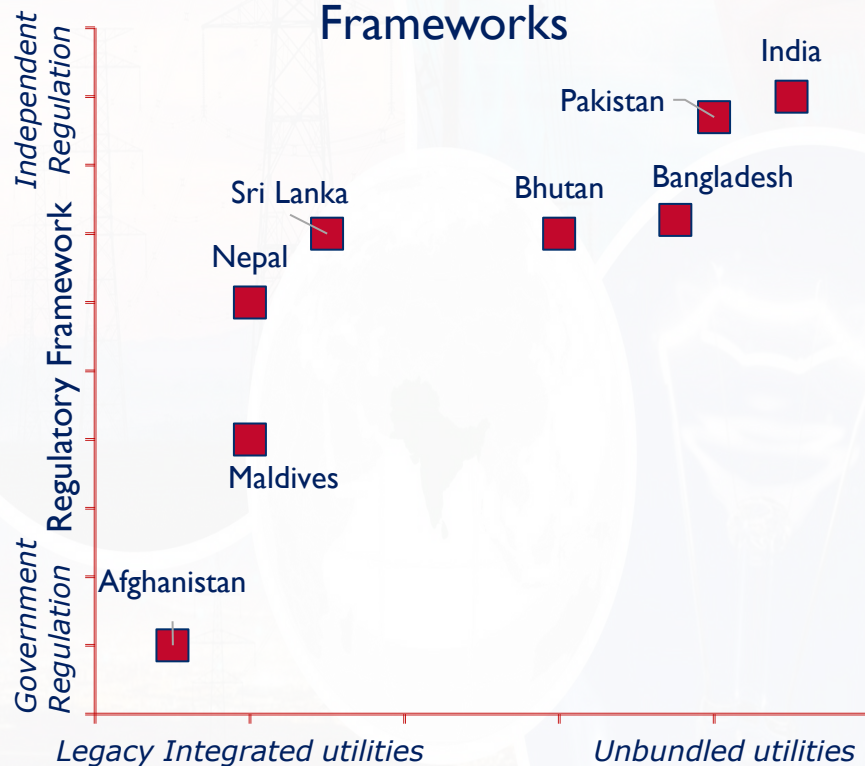
Regional Electricity Markets with Regional Common Vision Across the Globe



Note: Maps are only indicative

Power Sector Evolution, Market Development in South Asia

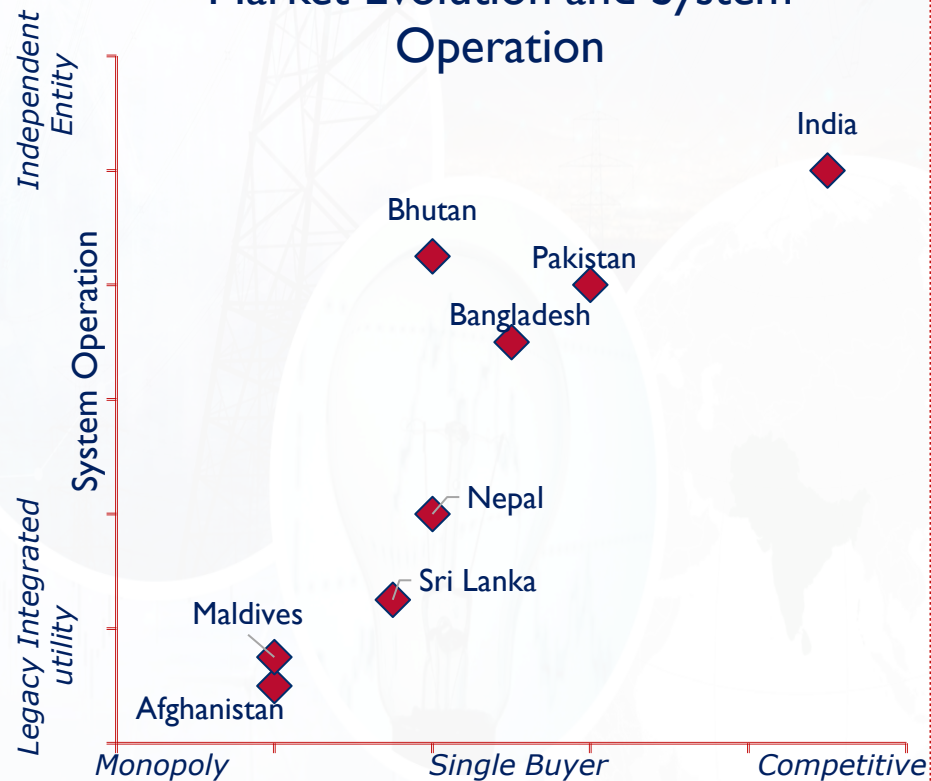
Power Sector and Regulatory Frameworks



Power Sector Framework

* Includes subjective interpretations

Market Evolution and System Operation



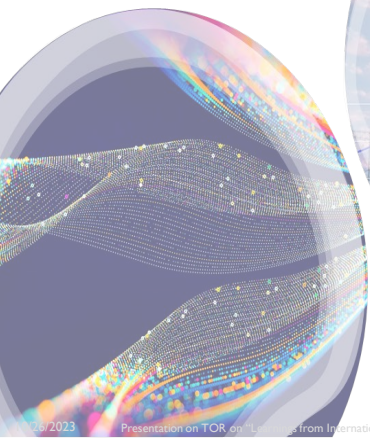
Electricity Market Evolution

* Includes subjective interpretations

Objective of the Knowledge Study

Objective

To carry out a Knowledge Study on Learnings from International Experiences on undertaking electricity market reforms, its role in electricity market integration, development of regional electricity markets, and develop a Regional Electricity Market Vision for South Asia



Terms of Reference of the Knowledge Study

1

Carry out a comprehensive review, analysis of international best practices of undertaking Electricity Market Reforms (EMR) vis-à-vis its benefits in countries in Europe, North America, Africa, ASEAN, North Asia and Australia etc.

2

The above review and analyse to also focus on role EMR in Electricity Market Integration (EMI) with neighbouring countries and in development of Integrated Regional Electricity Market (REM).

3

Development of Electricity Market & REMs are evolutionally in nature, and strongly influenced by overall prevailing policy, regulatory practices of a country and of the region. Therefore, analysis should specifically capture and answer the following :

3

3.1. Key drivers and enabling factors towards introducing Electricity Market Reform and developing REM.

3.2. Analytical details of Strategic, Legal, Policy, Regulatory, Institutional framework & instruments put in place for smooth transition to market and account of how consensus were built amongst different parties and how issues were reconciled.

3.3. Barriers, key challenges, and issues faced in implementation, and how these challenges and barriers were mitigated.

3

3.4. A thorough analysis of electricity market design covering aspects such as scheduling & dispatch, handling congestion. Imbalance Settlement, ancillary service, price discovery mechanism, product offerings, and associated institutional set up of trading platform.

3.5. Impact/benefits (qualitative and quantitative assessment) of the market development.

Terms of Reference of the Knowledge Study

4

Based on the Review & analyse from 1 to 3, prepare a detailed report on the international review and analysis, present a comparative overview of the models and key learnings.

5

Review & analyse the scenario prevalent in South Asian (SA) countries with respect to electricity market development, electricity market structure/practices/philosophy and scenario for the near future (next 5-10 years) on electricity market development and integration

6

Taking in consideration the findings of 1 to 5 , Prepare the Draft Report along with a Regional Electricity Market Vision along with Roadmap and Action Plan for South Asia

7

Present the findings of Draft Report along with a Regional Electricity Market Vision along with Roadmap and Action Plan for South Asia in the 12th Meeting of Task Force-3 and incorporate the suggestions/comments

8

Present the final report along with Regional Electricity Market Vision covering Roadmap and Action Plan for South Asia and conduct a regional dissemination workshop.



Tentative Timeline of the Knowledge Study

04

Learnings from International Experiences on undertaking Electricity Market Reforms and develop Regional Electricity Market Vision for South Asia



Timeline of the Knowledge Study

Tentative Timeline : Seven Month

SL NO	Deliverable	TIMELINE
1	Consultant On board	T
2	Inception Report	T+1
3	Draft Report covering the analysis of international best practices, South Asian scenario and Regional Electricity Market Vision along with Roadmap and Action Plan for South Asia	T+4
4	Present the Draft Report covering the analysis of international best practices, South Asian scenario and Regional Electricity Market Vision along with Roadmap and Action Plan for South Asia in 12 th TF-3 Meeting	T+5
6	Final Report covering the analysis of international best practices, South Asian scenario and Regional Electricity Market Vision along with Roadmap and Action Plan for South Asia and Dissemination Workshop	T+7

Thank You



Contact: rpanda@sarep-southasia.org
rajivratnapanda@gmail.com
+91-9650598697



This Photo by Unknown Author is licensed under [CC BY-ND](https://creativecommons.org/licenses/by-nd/4.0/)

Disclaimer

The data, information and assumptions (hereinafter ‘data-set’) used in this document are in good faith and from the source to the best of SAREP (the program) knowledge. The program does not represent or warrant that any data-set used will be error-free or provide specific results. The results and the findings are delivered on “as-is” and “as-available” data-set. All data-set provided are subject to change without notice and vary the outcomes, recommendations, and results. The program disclaims any responsibility for the accuracy or correctness of the data-set. The burden of fitness of the data-set lies completely with the user. In using the data-set data source, timelines, the users and the readers of the report further agree to indemnify, defend, and hold harmless the program and the entities involved for all liability of any nature.