



**USAID**  
FROM THE AMERICAN PEOPLE

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

# **Theme Presentation and Deliberation**

**on**

**Ideas/new activities under Task Force-I to meet the objective of TF-I in the context changing/evolving scenario in South Asia, Updating and Expansion of the Task Force-I activities**

Session 3: Updates on the planned Interventions of the SAREP Task Force-I on “Coordination of Policies, Legal and Regulatory Frameworks for CBET”

**11<sup>th</sup> Meeting of SAREP Task Force-I on “Coordination of Policies, Legal and Regulatory Frameworks for Cross Border Electricity Trade”  
14.00 -15.00 Hrs., 9<sup>th</sup> October 2023 ,The Maitland State Room, Mount Lavinia Hotel, Colombo, Sri Lanka**

Presented by  
**Ms. Namrata Mukherjee, Deputy Chief of Party & Mr. Rajiv Ratna Panda, Power Market Specialist, SAREP**



**USAID**  
FROM THE AMERICAN PEOPLE

# Content

- 01** Technical Assistant/Support to Policy Makers and Regulators in developing Model Policy Documents and Regulation related to Cross Border Electricity Trade (CBET).
- 02** Policy and Regulatory Exchange visit/International study Tour to Western Energy Imbalance Market (WEIM)
- 03** Annual 3-week residential Certificate Master Class on “Electricity Market Development ” for Policy makers and Regulators
- 04** Any other thought and ideas



**USAID**  
FROM THE AMERICAN PEOPLE



Technical assistance

01

# Technical Assistant/Support to Policy Makers and Regulators in developing Model Policy Documents and Regulation related to CBET



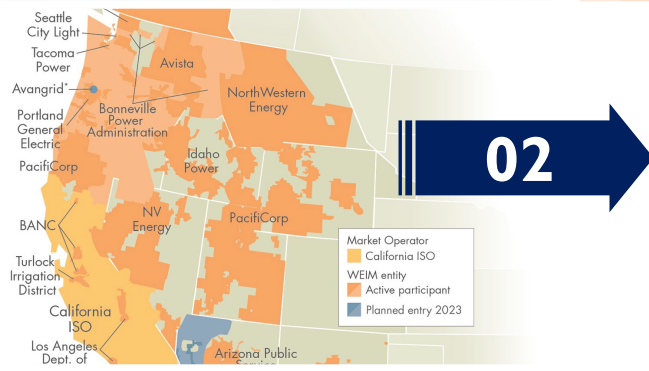
## Technical Assistant/Support to Policy Makers and Regulators in developing Model Policy Documents & Regulation related to CBET

- ❑ Technical Assistance and Support to Policy Makers and Regulators in developing country specific **Model Policy Documents and Regulation** related to CBET and Electricity Market as needed in countries that currently **does not have such policy, regulations/procedures/frameworks** etc. **as needed.**
- ❑ Nature of support could be
  - ❑ **Technical Resource/Expert Support in drafting/developing model policy, regulation** related to cross border electricity trade and Electricity Market Development.
  - ❑ Technical Activities/Support for **Implementing the recommendations of the TF-I studies and studies being developed under SAFIR Working Group.**
  - ❑ **Knowledge and experience sharing of best practices** in the above context of **developing CBET policies & regulations** both from inside and outside of the South Asia Region.





**USAID**  
FROM THE AMERICAN PEOPLE



**02**

# Policy and Regulatory Exchange Visit/International study Tour to Western Energy Imbalance Market (WEIM)

Join Western Energy  
Imbalance Market

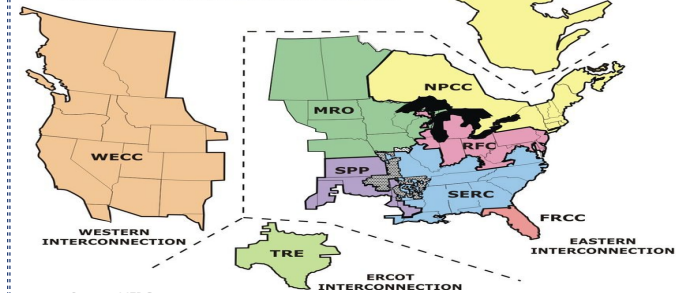


- ❖ California ISO (**CAISO**) is the only **independent grid operator in the western U.S.**
- ❖ The CAISO **grants equal access** to nearly 26,000 circuit miles of transmission lines & coordinates competing & diverse energy resources into the grid where it is distributed to consumers. Maximum **Peak MW demand 52 GW**
- ❖ **California ISO** also **operates a competitive wholesale power market** designed to promote a broad range of resources at lower prices and manages the **reliability of its transmission grid.**
- ❖ CAISOs markets include **energy (day-ahead and real-time), ancillary services, and congestion revenue rights.**
- ❖ **Western Energy Imbalance Market (WEIM), A real Time Market, An initiative led by California ISO since 2014.**
- ❖ **CAISO** operates the **WEIM**, a voluntary market, which currently includes **CAISO and other balancing authority areas** in the western United States.

## ISO/RTO Growth before 1996



## NERC INTERCONNECTIONS



# Regulatory and Regulatory Exchange visit/International study Tour to Western Energy Imbalance Market (WEIM)- **What is unique about it ?**

The concept behind the **EIM is nothing new**. All Independent System Operator (ISOs) and Regional Transmission Organizations (RTOs) run **integrated day-ahead markets and real-time markets**, which include 15-minute and five-minute markets.

But what is different about WEIM is that **CAISO** has made its markets available to entities outside of its ISO territory.

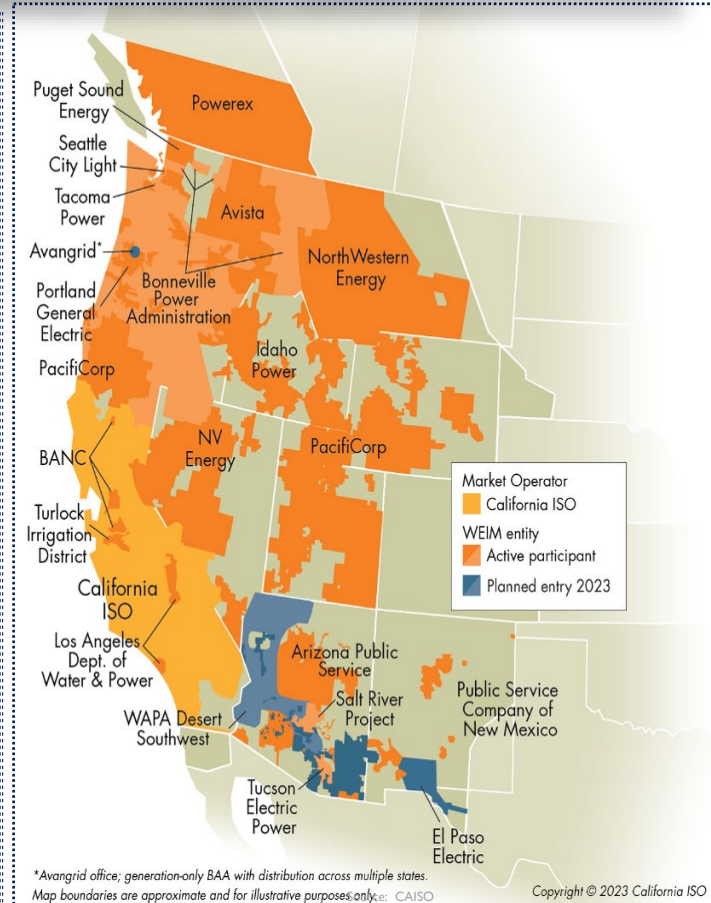
The WEIM serves parts of **Arizona, Oregon, Nevada, State of Washington, California, Utah, Wyoming and Idaho**.

**Powerex Corp**, based in Vancouver, British Columbia, Canada also participates in the WEIM.

The result has been enhanced grid reliability and cost savings for participants in the hundreds of millions of dollars.

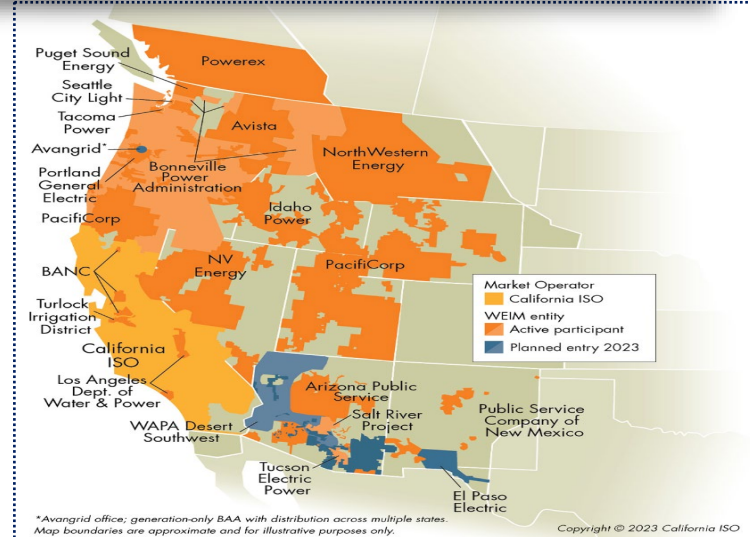
Besides its economic advantages, the EIM improves the **integration of renewable energy, which leads to a cleaner, greener grid**.

**April 3, 2022, CAISO** hits all-time peak of more than 97% renewables



Through the Study Tour, It will be interesting to learn:

- How **CAISO** allowed other parties to participate outside of his territories ?
- What was the **motivation** ?
- What is the **process followed for Joining** the WEIM ?
- What **kind of agreement** were needed for WEIM ?.
- What is the **governance structure** ?
- What are the **minimum technical, legal, regulatory and commercial requirement** to Join the WEIM.
- How **Powerex of Canada** joined WEIM ?
- What is the **overall regulatory framework** governing WEIM ?
- What is the **dispute settlement method** ?
- How the **Regional Conesus** built for WEIM ?
- How **WEIM Charter** drafted and adopted ?
- What is the **Extended day-ahead market (EDAM)** design, implementation action ahead.
- How is **consensus-built** on EDAM ?
- How were the **Political, regulatory and territorial issues** managed ?
- How the **competition among states** are managed/tapped ?



\*Avangrid office; generation-only BAA with distribution across multiple states. Map boundaries are approximate and for illustrative purposes only.

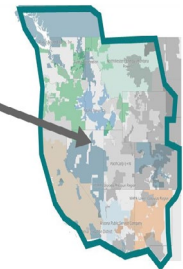
Copyright © 2023 California ISO

BAU



West-wide EDAM

EDAM scenario includes all WECC BAs



No DA markets. Western EIM and SPP WEIS participation continues





**USAID**  
FROM THE AMERICAN PEOPLE



**03**

## **Annual 3-week residential Certificate Master Class on “Electricity Market Development” for Policy makers and Regulators of South Asia**



# Annual 3-week residential Certificate Master Class on “Electricity Market Development” for Electricity Policy Makers & Regulators of South Asia

## Power Market Basic

Evolution of Electricity Markets in developing and developed economies including Regional Markets

Fundamentals of Electricity Markets

Competition in Power Sector and Economics of Regulation.

Political, economic, social and reform consideration for power market development.

Building policy/political Consensus for power market and regulatory reform.

## Power Market Model, Design and Other Considerations

Models of Regional market development and Market integration.

Long term supply and demand balance in electricity markets.

Market Failure and Natural Monopoly, Pricing and Regulation of Natural Monopoly

Designing wholesale electricity markets- Characteristics and structures of electricity markets, key factors, ingredients etc.

The role of system operators, new challenges for system and market operation with high shares of clean energy.

## Power Market Economics, Regulation and Operation

Power Market Economics, Power Market Regulation, Operation of Power Exchanges, Market Monitoring, Open Access

Power Procurement Planning, Ancillary Services, Congestion Management, Imbalance settlement-DSM regulations

PoC charges and Transmission loss regulations, Metering Regulations, Energy accounts and Settlement of bills.

Strategy and rationale for different Power market Products design (all products). Future of Electricity Markets

## Annual 3-week residential Certificate Master Class on “Electricity Market Development” for Electricity Policy Makers & Regulators of South Asia

SAREP will explore Plans to organise 3-week residential Certificate Master Class on “Electricity Market Development” for Policy makers and Regulators of South Asian Countries in partnership **with reputed training/research organisation.**

- Florence School of Regulation, European University Institute
- Indian Institute of Management (IIM- Ahmedabad)
- Administrative Staff College of India
- IISC Bangalore
- IIT-Kanpur
- ISB

Certificate Course

Sustainability of Training/Master

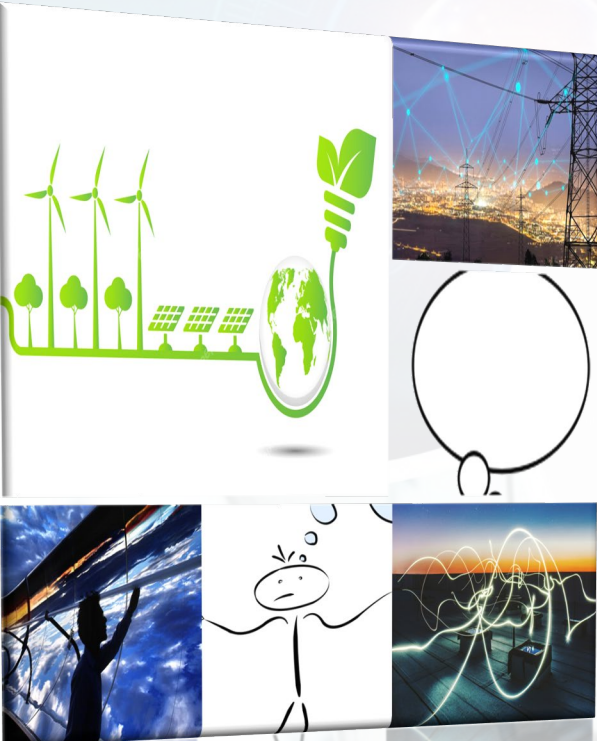
Institutionalisation of Training/Master Class

**Aims to make Certificate Master Class on “Electricity Market” as flagship and credible program in the region**





# Any other Ideas/Thoughts/Need for Harmonisation of Policies, Legal and Regulatory Frameworks for advancing Cross Border Electricity Trade



- ❖ **Emerging Needs**
- ❖ **Short term and long-term priorities**
- ❖ **Country Specific Special Requirements**
- ❖ .....
- ❖ .....

# Thank You



This Photo by Unknown Author is licensed under [CC BY-ND](#)

Contact: [rpanda@sarep-southasia.org](mailto:rpanda@sarep-southasia.org)  
[rajivratnapanda@gmail.com](mailto:rajivratnapanda@gmail.com)  
+91-9650598697

## 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.*

# Policy and Regulatory Exchange visit/International study Tour to Western Energy Imbalance Market (WEIM)-Expanding

- **Transparency: Q4 2022 resulted \$ 485.3 Million Benefit. So far EIM has made benefits of \$ 3.4 Billion since 2014.**
- Based on the **success and learning of WEIM on February 2, 2023**, Western day-ahead market enhancements approved.
- **Approved by** ISO Board of Governors and the Western Energy Imbalance Market (WEIM) Governing Body.
- It will allow WEIM entities who currently buy and sell energy in the real-time market to participate in an **extended day-ahead market (EDAM)**.

## CAISO EDAM Benefits Study (1.19 Billion saving)

Area	Operational Savings (\$M/year)	Capacity Savings (\$M/year)	Total Savings (\$M/year)
California	\$214	\$95	\$309
Other Western States	\$329	\$557	\$886
<b>Total</b>	<b>\$543</b>	<b>\$652</b>	<b>\$1,195</b>

Source: CAISO, CAISO

- **Feb 8, 2023**, A key California lawmaker introduced a bill to **allow CAISO to become a Western RTO** by expanding its governance to include representatives from other states. (Bill 538 (AB 538))

\$485.3 million savings in Q4 2022

[Read full report >>](#) [Read news release >>](#)

(millions \$)

TOTAL \$3.4 billion

gross benefits since Nov 2014

