

# Overview of California Transmission Processes and Entities and how they Relate to Priority Projects

## Renewable Energy Policy Group Meeting

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# Presentation Overview

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# California's Renewable Energy Goals

- Purpose: To increase the diversity, reliability, public health, and environmental benefits of state's energy mix.
- 2002 Renewables Portfolio Standard (RPS) required 20% of retail sales from renewables by 2017.
- 2006 law increased RPS to 20% by 2010.
- Governor's Executive Order S-14-08 (11/17/08) increased RPS goal to 33% by 2020.
- Governor's Executive Order S-21-09 (9/15/09) directed Air Resources Board (ARB) to adopt regulations by July 31, 2010 to meet the 33% by 2020 RPS.



# 2010 ARRA Solar Projects at the CEC

- Ridgecrest Solar Power Project (09-AFC-9)
- Genesis Solar Energy Project (09-AFC-8)
- Palen Solar Power Project (09-AFC-7)
- Blythe Solar Power Project (09-AFC-6)
- Beacon Solar Energy Project (08-AFC-2)
- Calico Solar Project (formerly SES Solar One)(08-AFC-13)
- Palmdale Hybrid Power Project (08-AFC-9)
- Imperial Valley Solar Project (formerly SES Solar Two)(08-AFC-5)
- Ivanpah Solar Electric Generating System (07-AFC-5)



# Context for this Afternoon

- Renewable Energy Policy Group meetings have focused on permitting the power plants.
- To qualify for ARRA funding projects must “start construction” by year end, and come on line per specified dates.
- Some projects will be financed on the sponsor’s balance sheet at least initially, but most require the closing of project financing.
- Project financing will require not only CEC permit, but also due diligence on the transmission arrangement, the Power Purchase Agreement (PPA), the viability of the technology and depth of the management team, etc.
- Today we will start the discussion of the transmission and PPA issues.



# Transmission – Why it's Important

- Achieving state policy goals will require new transmission to connect remote renewable generation sources to the load centers.
- Financing will require a reliable transmission pathway to the load centers from the generator.
- Given the remote location there may a “chicken and egg” problem.
- Transmission projects may be viable only with a sufficient quantity of renewable projects.
- The transmission owner requires firm commitments from enough renewable projects to justify the costs of the transmission.



# Transmission – Who are the Regulators?

- CAISO – Plans and operates the overall transmission system for a number of California's transmission owners.
- CEC – Responsible for demand forecasting, overall energy planning, and development of transmission corridors.
- CPUC – Responsible for permitting transmission projects (including CEQA and maybe coordinate with NEPA) and regulates distribution system and procurement programs for IOUs.
- FERC – Regulates tariffs of CAISO and determines transmission rates.
- WAPA and some municipal utilities may have transmission facilities, and have their own regulators.



# Who are the Transmission Owners?

The majority of ARRA are located in Southern California, where the transmission system is primarily owned by:

- Southern California Edison (SCE)
- San Diego Gas & Electric Company (SDG&E)
- Imperial Irrigation District (IID)
- Los Angeles Dept. of Water and Power (LADWP)
- Western Area Power Administration (WAPA)
- Although Pacific Gas & Electric (PG&E) typically constructs and owns transmission in Northern and Central California, they are also seeking renewables in Southern California.



# What is the Interconnection Process?

- CAISO tariff establish the process, earlier sequential and now clusters for System Impact Studies.
- Parties then negotiate Large Generation Interconnection Agreements (LGIA).
- Key question are the impacts, if any, beyond the first point of interconnection.
- Will the project rely upon any permitted CPCNs (Sunrise, TRTP, California portion of DPV II)?
- Will any transmission upgrades require CPUC approvals?
- Will any transmission upgrades require Federal approvals?
- Are there any “connected actions” issues?
- What if it is not CAISO process, but LADWP, WAPA, IID, or ??



# Interconnection Issues for ARRA Projects

- Current ISO Schedule for Transition Cluster ARRA Projects:
  - July 2010 completion of Phase 2 Study.
  - Interconnection Agreement by October 2011.
- After LGIA, what, if any, issues will need resolution?



# Current Renewable Transmission Planning Activities

- Renewable Energy Transmission Initiative (RETI)
- California Transmission Planning Group (CTPG)
- CAISO Renewable Energy Transmission Planning Process (RETPP)
- CPUC OII/OIR for Transmission to Access Renewables
- CEC Transmission Corridor Planning and Designation
- CEC Strategic Transmission Investment Plan
- Western Interconnection Planning Activities

## Land Use Planning for Renewables

- Desert Renewable Energy Conservation Plan Executive Order S-14-08
- Solar Programmatic Environmental Impact Statement
- Western Renewable Energy Zones



# RETI Overview

- RETI -- a statewide collaborative effort to identify and facilitate development of transmission needed to access the most cost-effective and environmentally-preferable renewable resources.
- Assumes renewables necessary to meet 20% and 33% RPS goals.
- Developed renewable supply curves considering economic and environmental costs
- Prioritizes renewable zones & required transmission:
  - Developable potential
  - Resource cost and value
  - Environmental issues
- Intended to inform renewable generation siting and transmission line permitting & planning activities.



# RETI Statewide Processes

## CEC

Strategic Plan

Corridor Designation

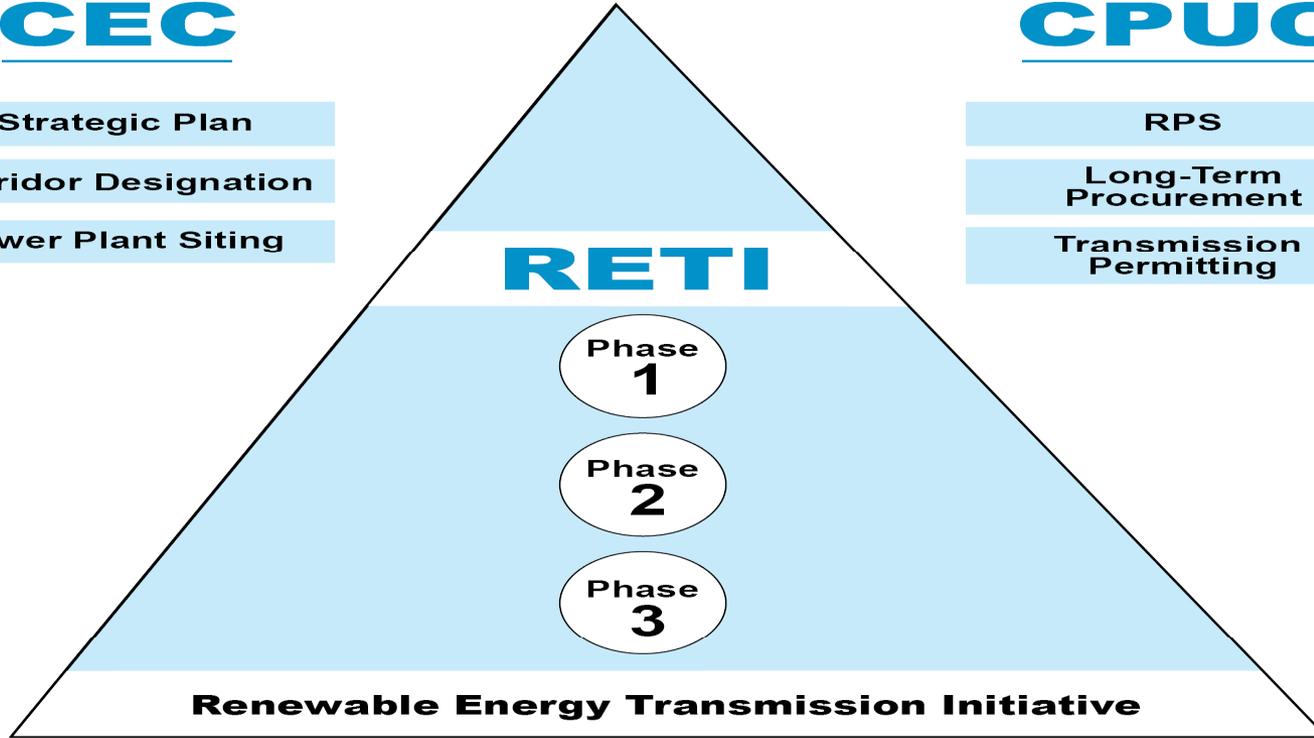
Power Plant Siting

## CPUC

RPS

Long-Term  
Procurement

Transmission  
Permitting



## CAISO & POU S

*Transmission Planning Processes*

Generator  
Interconnection  
Process

FERC  
Order 890

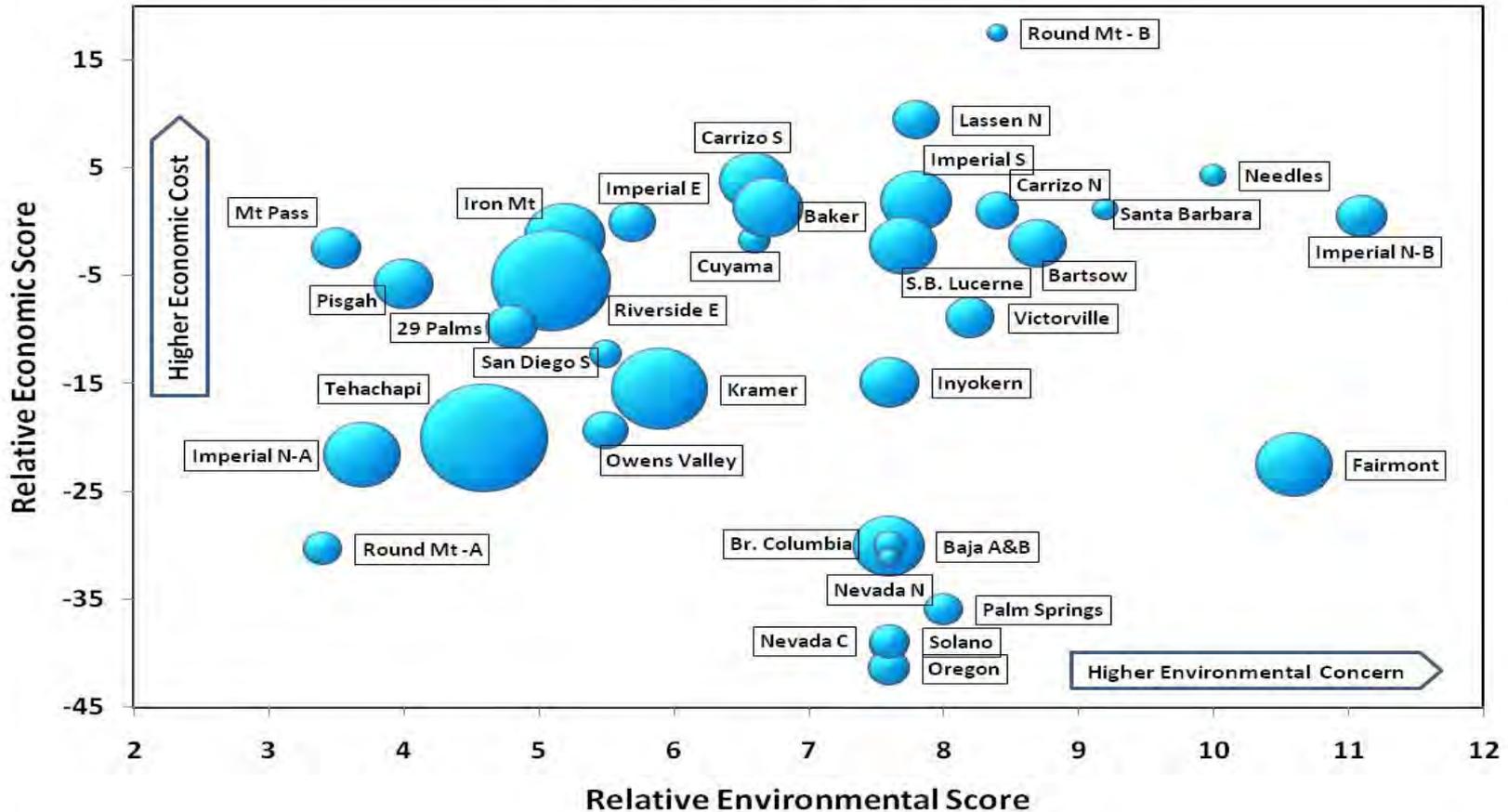
Subregional  
Planning  
Process

POU  
Certification  
Process



# RETI CREZ Scores

CREZ Economic and Environmental Scores - Phase 2  
(see accompanying notes)



Source: RETI Phase 2A Final Report, September 2009



# CTPG Planning Process

- Joint planning forum consistent with FERC 890 planning principles
- Develop conceptual (not prescriptive) statewide transmission plan to meet 33% RPS by 2020
- Provide opportunities for stakeholder input and recommendations:
  - Net Short and Renewable Scenarios
  - Generation Re-Dispatch
- Conduct sensitivity analysis for assumptions when quantitative data is not readily available
- 2010 Study results – a list of system improvements that provide a basis for “least regrets” transmission planning to CTPG members
  - CTPG members to conduct operational, deliverability and alternative analysis based on respective policies and practices



# CTPG Schedule

- CTPG Schedule being adjusted to allow time to include RETI/CPUC scenarios into Phase 2 Study Plan:
  - February 10: Released Draft Final Phase 2 Study Plan
  - February 17: Released Final Phase 1 Study Report
  - March 3: Release Final Phase 2 Study Plan
  - April 9: Release Draft Phase 2 Study Report
  - May 4: Release Final Phase 2 Study Report
- Phase 3 schedule being revised and will remain consistent with transmission planning processes undertaken by its CTPG members.
  - CTPG 2020 Phase 3 Study Report is the last iteration of studies that will become the conceptual statewide transmission plan to be used by CAISO and other CTPG planning entities to develop their own respective transmission plans.



## CAISO RETPP Process

- Collaborate with CTPG to develop conceptual statewide plan.
- Enable transmission infrastructure to move forward expeditiously and efficiently.
- Provide opportunity for stakeholder participation.
- Integrate RETPP with FERC Order 890 Transmission Planning Process (TPP) and Large Generator Interconnection Process (LGIP) milestones into one comprehensive annual transmission plan.
- Phase 1: CTPG to develop conceptual statewide transmission plan.
- Phase 2: Refine conceptual plan to identify elements needed to reach 33% RPS by 2020 for CAISO area
  - December 2010: Seek Board approval of needed elements
- Phase 3: Receive and assess projects for identified elements
  - Spring 2011: Seek Board approval of projects



# CEC Corridor Planning and Designation

- Designate and preserve corridor zones to meet long-term transmission infrastructure needs (PRC section 25331).
- Facilitate development of renewable generation.
- Improve reliability of transmission system.
- Streamline permitting and increase certainty of permitting outcomes.
- Provide a link between transmission planning and permitting.
- Involve local, state and federal governments, generators, other stakeholders, and the public in planning for transmission corridor zones.
- Promote consistency of land use changes with future transmission line development.



# Western Interconnection Planning

- Western Electricity Coordinating Council (WECC) formed in 2002 by the merger of the Western Systems Coordinating Council (WSCC) and two regional transmission associations.
- Under a delegation agreement from NERC, the FERC-certified Electric Reliability Organization (ERO), WECC adopts and enforces planning and operating reliability standards that are mandatory in the United States under Section 215 of the Federal Power Act.
- Western Governors' Association (WGA) loosely coordinates electricity policies of the Western states and provinces.
- Western Interstate Energy Board (WIEB) provides energy information and advice to WGA.
- New State and Provincial Steering Committee grows out of a DOE funding opportunity to enhance transmission expansion planning in the West.



# Western Interconnection Planning

- ARRA \$60 million in funding to support transmission planning for the country's three transmission networks was announced in December 2009.
- Funding is divided into two topic areas:
  - Topic A – Interconnection level analysis and planning.
  - Topic B – Cooperation among states on electric resource planning and priorities.
- For the Western Interconnection:
  - WECC was awarded \$14.5 million for Topic A activities, including coordination of subregional plans into one integrated Western assessment.
  - WGA was awarded \$12 million for Topic B to support Western Renewable Energy Zone planning activities.



# Conclusions

- Resolution of transmission interconnection and financing issues necessary for ARRA projects.
- Financing will require a reliable transmission pathway to the load centers from the generator.
- Statewide transmission plan from CAISO and CTPG must to be integrated with DRECP.
- Planning processes need to avoid no touch zones in DRECP.
- DRECP needs to identify best possible corridors to connect CREZs with existing transmission grid.
- Corridor planning and designation can play a role.
- Accessing renewable resources developing throughout the Western Interconnection also requires coordinated planning.



# Regions of the DRECP

