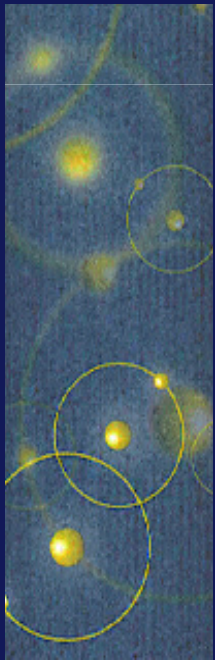




energy strategies



# Overview of Issues at the Western Electricity Coordinating Council (WECC)

Focusing on those Issues Impacting Independent Generators

**Presented to The California Independent Energy  
Producers Association 28<sup>th</sup> Annual Meeting**

By

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September 2009

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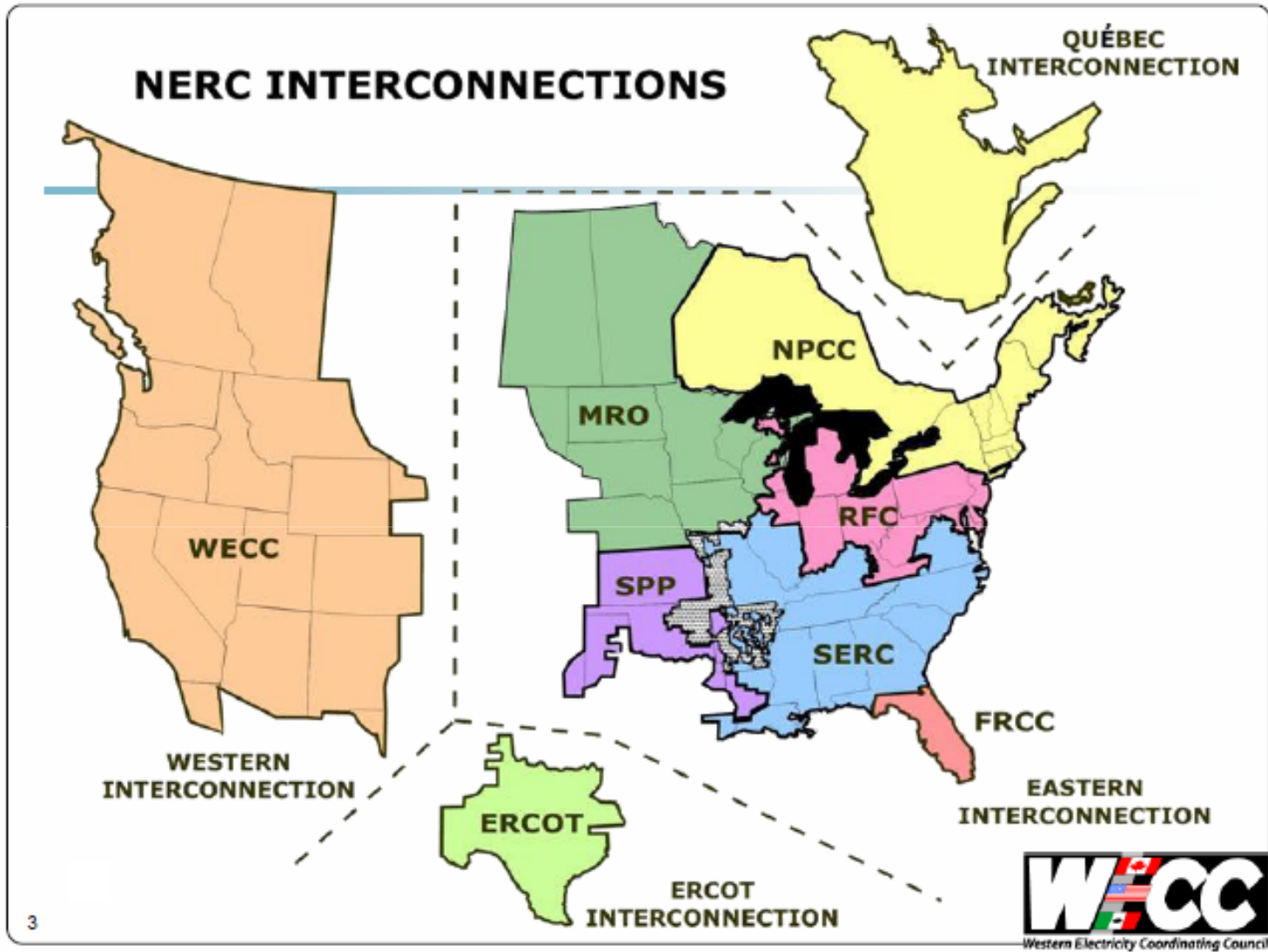
- 1) Overview of WECC
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  - a) Transmission Planning and Development in WECC
  - b) Variable Generation Integration
  - c) Registration and Standards
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# Overview of WECC

- Formed in 2002, formerly WSCC
- Largest geographic area of the eight NERC Regional Entities – WECC covers the entire Western Interconnection
- WECC region covers 1.8 million square miles, all or part of 14 states, two Canadian provinces and a portion of Mexico
- WECC has 250 members divided into seven membership classes
- WECC is the Regional Entity in charge of verifying compliance with NERC Reliability Standards as well as WECC Regional Reliability Standards
- 2010 Budget = \$47 million, 2003 Budget  $\approx$  \$15 million

# Overview of WECC

- WECC's Functions as a Regional Entity:
  - Standards Development & Compliance Monitoring
  - Reliability Standards Enforcement
  - Load Resources Assessment & Transmission Expansion Planning
  - Variable Generation Issues
  - WREGIS – Renewable Energy Tracking System
  - Training
  - Increasing role in policy



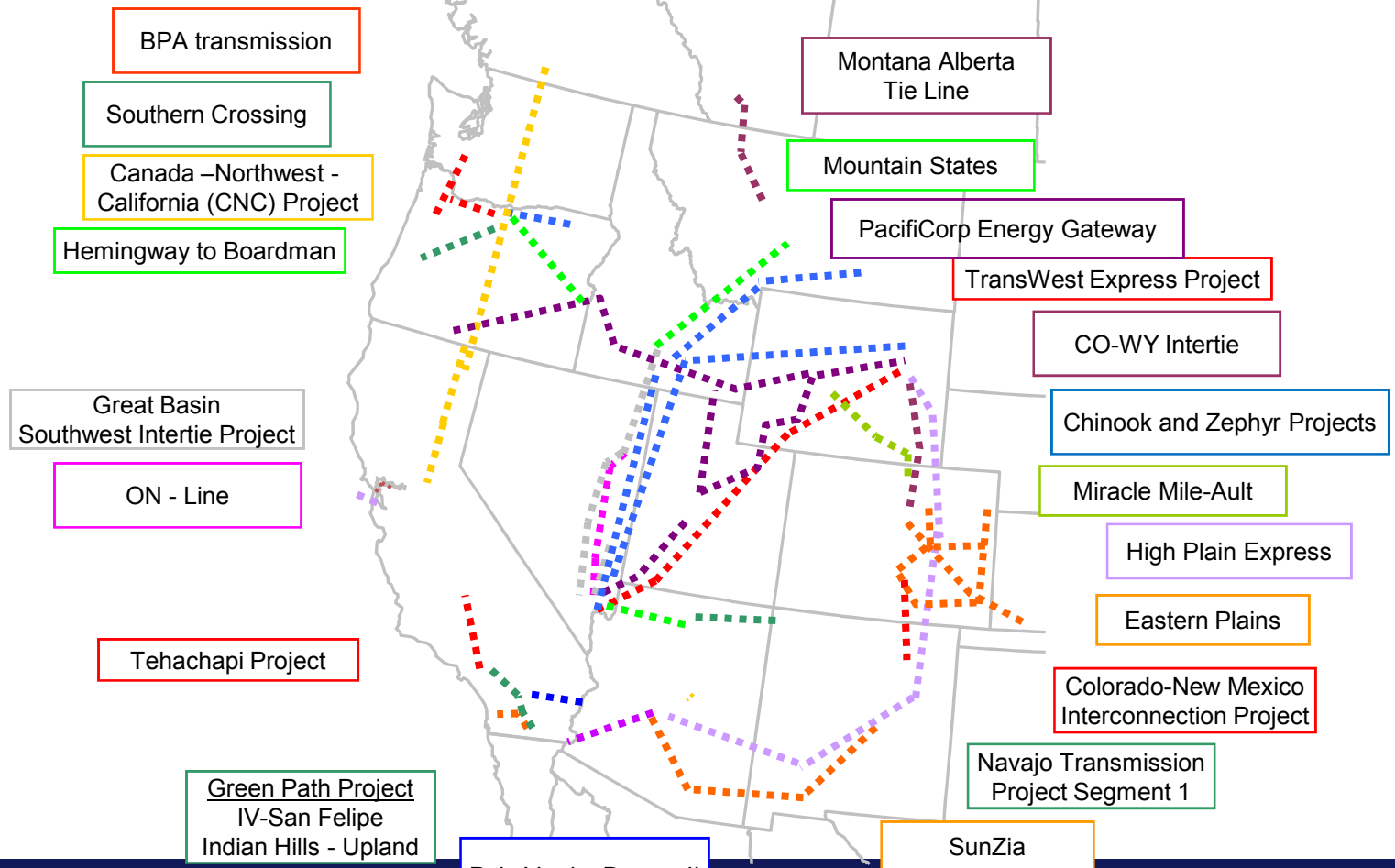
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# WECC Issues – Transmission Planning

- TEPPC is facilitating transmission planning from a “bottom up” approach throughout the Western Interconnection
- Encourages stakeholder involvement
- Run congestion studies for the Western Interconnection
- Provides analysis for policy makers in the Western Interconnection
- Challenges
  - Western Interconnection cost recovery and siting
  - Intermittent resources
  - New federal legislation
  - Environmental Challenges

# WECC Issues – Major Transmission Lines in Development



# WECC Issues – Registration & Standards

- Some mandatory NERC Standards ask the Regional Entity (RE), WECC in the West, to develop documents pursuant to NERC standards
- These documents are mandatory and sanctionable since they are referenced in a NERC Standard – but did not go through the WECC process
- WECC Board has addressed this issue:
  - Now asks all of these type of documents to be classified as a WECC Criterion
  - Must include a description in the introduction of the Criterion stating that it was developed pursuant to NERC Standard XX and therefore, violations of this document are sanctionable
  - Board asked that these documents go through full due process at WECC (although they will **not** need further approval from NERC & FERC)

# WECC Issues – Registration

- WECC began registering some Generator Owners/Operators (GO/GOPs) as Transmission Owners/Operators (TO/TOPs) by virtue of their generator tie-lines
- TO/TOP Registration creates a whole new set of costly Reliability Standards which must now be adhered to by the GO/GOP
- This is not a WECC-specific issue, it is also a NERC issue
- NERC created a task force to review this issue. The task force issued a draft report last month. The report recommends that:
  - Generation interconnection facilities should generally be addressed by modifications to existing standards
  - No TOP requirements should be imposed on GOP's simply because of interconnection facilities
  - Certain interconnection arrangements, i.e. three terminal configurations may still require TO/TOP registration
- WECC had plans for a group of generators to address this issue but the issuance of the NERC report will likely eliminate the need for a WECC-specific group

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# WECC Issues - Variable Generation Subcommittee



## Purpose:

- Identify issues and opportunities related to presence of variable generation sources in the Western Interconnection
- Facilitate the development and implementation of solutions that add value to WECC members
- Focus on the regional reliability and market challenges of renewable energy integration
- Compile information and member issues, coordinate and perform issue analysis, and disseminate information back to membership

# WECC Issues - Variable Generation Subcommittee

## Marketing Workgroup Assignments

- Investigate new approaches on how ancillary services can be supplied for VG
- Evaluate the impacts of REC markets
- Investigate product codes used in scheduling of VG resources
- Monitor NAESB activities as appropriate

## Objectives for MWG white paper

- Discuss how markets can help integrate variable generation, and add value for asset owners
- Discuss desirable market characteristics
- Discuss what type of markets could be useful and easily implemented.  
Products include loads as well as generators.

## Joint Initiative

- Joint Initiative is a year long effort by WestConnect, NTTG and Columbia Grid to develop solutions integrating renewable resources
  - Short timeframe
  - Initial products straightforward (do not require tariff amendments)
  - Focus is on more efficient use of existing transmission, including greater ease in accessing system flexibility both within and outside of Balancing Authorities

# Joint Initiative

- Currently focused on three areas that relate directly to wind integration issues
  - Within-Hour Transmission Purchase and Scheduling Business Practices
    - Allows for within-hour schedule changes to address unanticipated generation patterns
    - Better use of capacity within and outside of BA (bilateral transactions) by allowing shorter timeframes for scheduling
- Intra-Hour Transaction Accelerator Platform (I-TAP)
  - Facilitates bilateral transactions to address unanticipated generation patterns
  - Facilitates accessing flexibility both within and outside of a BA's area as opposed to relying exclusively on BA's system to support wind integration
  - Helps manage costs of integrating wind
- Dynamic Scheduling System (DSS)
  - Provides more agile delivery mechanism for dynamic energy products (currently, dynamic scheduling must be arranged manually days, weeks, or months in advance)

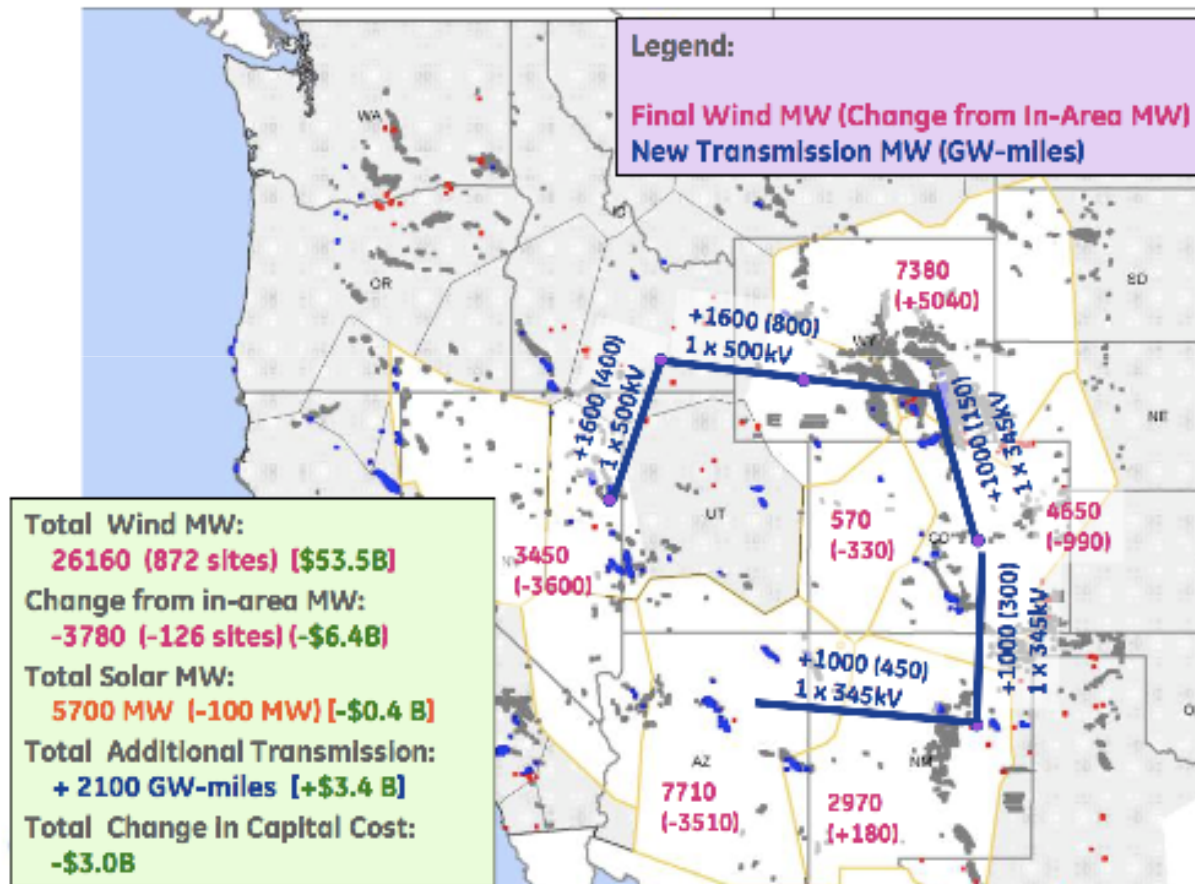
# Western Wind and Solar Integration Study

- Goal
  - To understand the costs and operating impacts due to the **variability** and **uncertainty** of wind, PV and concentrating solar power (CSP) on the WestConnect grid
- Utilities
  - Arizona Public Service
  - El Paso Electric
  - NV Energy
  - Public Service of New Mexico
  - Salt River Project
  - Tri-State G&T
  - Tucson Electric Power
  - Xcel Energy
  - WAPA



# Western Wind and Solar Integration Study

## Local Priority Scenario



# Western Wind and Solar Integration Study

## Capacity Values

Penetration	Total Renewables MW	Wind MW	CSP MW	PV MW
0%	0	0	0	0
10% Wind, 1% Solar	11,490	10,290	600	600
20% Wind, 3% Solar	23,350	19,950	1,700	1,700
30% Wind, 5% Solar	35,740	29,940	2,900	2,900

Wind + CSP+PV	Wind only	CSP only	PV only
0			
15.8%	11.4%	92.6%	28.6%
17.7%	10.8%	93.3%	26.9%
18.5%	10.7%	92.2%	26.9%

Comments  
&  
Questions