



Western Renewable Energy Zone (WREZ) Initiative

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WREZ at a Glance

- **Western Governors Association Initiative**
 - Identify and map renewable resource-rich areas
 - Build transmission to ship electricity from renewable zones to load centers.

“Unprecedented challenges face the West in meeting the growing demand for electricity while achieving local and global environmental goals. The WREZ Project will help us tap our vast renewable resources and develop transmission that considers communities, environmental impacts and costs.”

Utah Governor Jon Huntsman

WGA Chairman

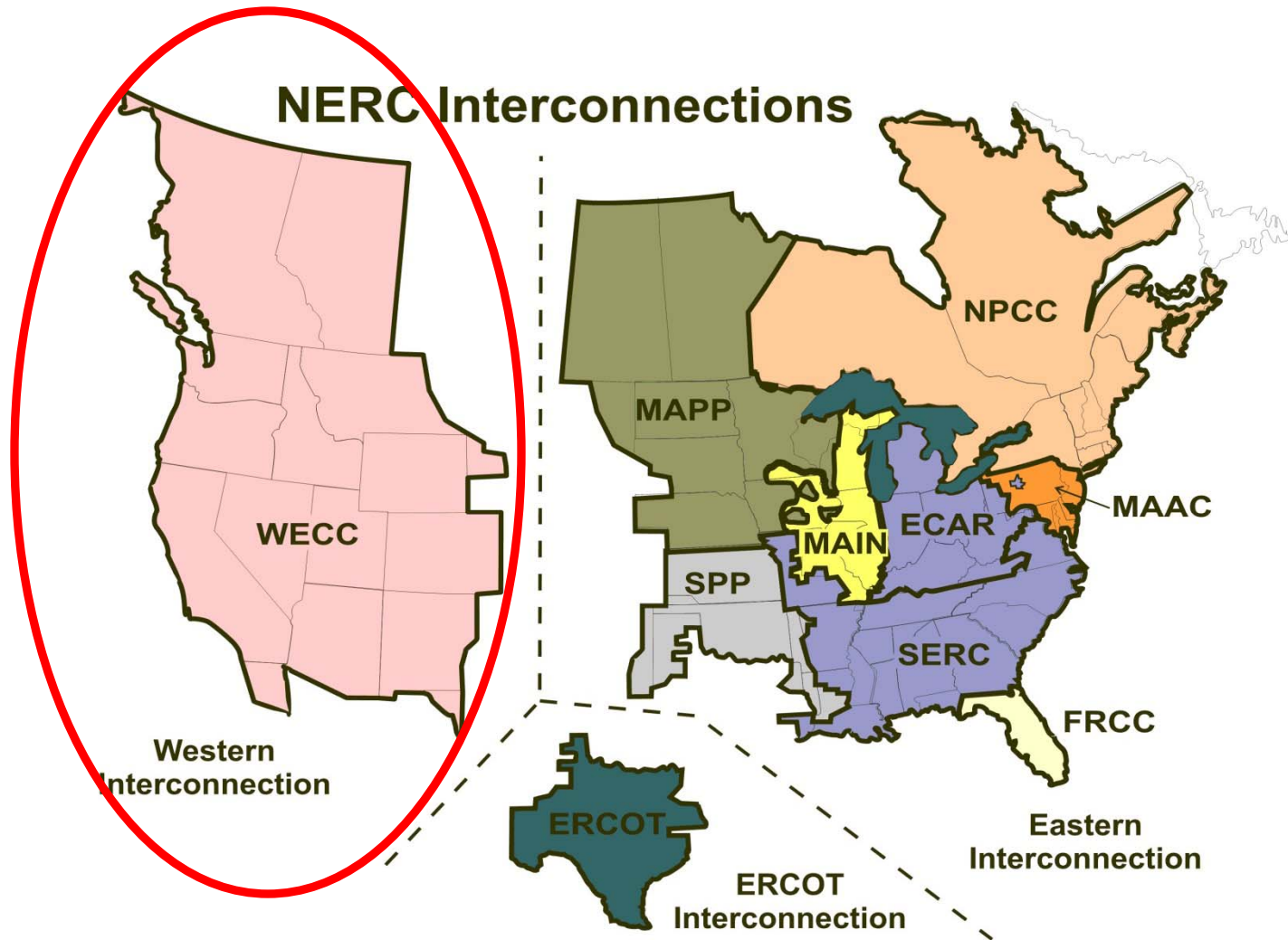




OUTLINE

- Western context
- WREZ project
- Complementary initiatives

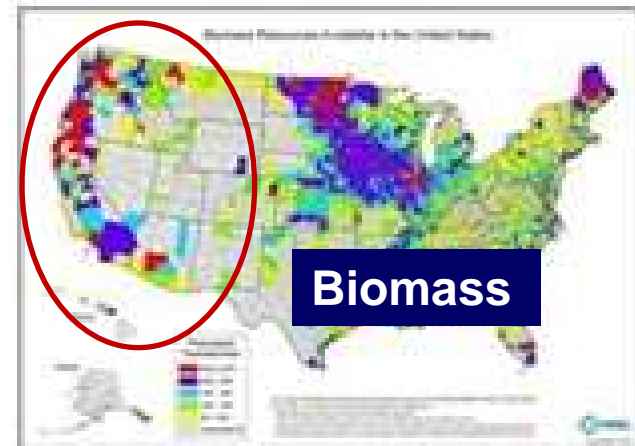
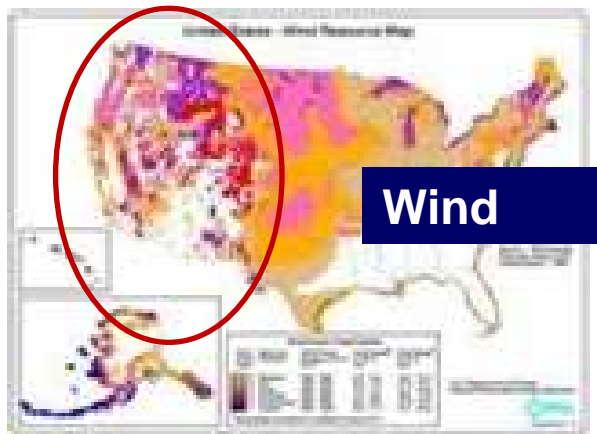
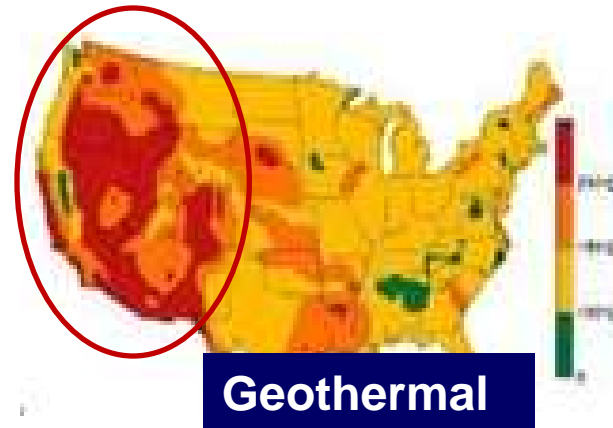
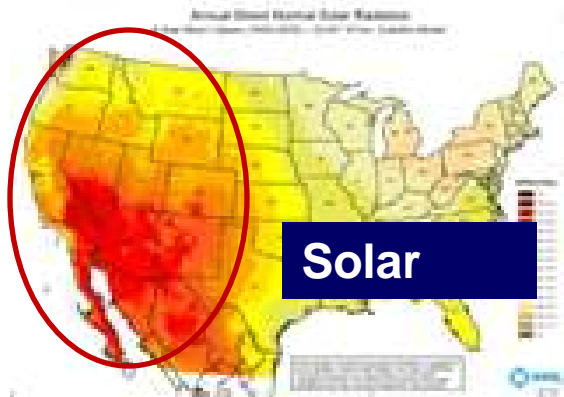
Context – Western Interconnection



Features of Western Power Markets

- No organized wholesale markets outside of California and Alberta
- 35 balancing authorities
- Large federal presence (land ownership and power marketing agencies)
- Three levels of transmission planning
 - Western Electricity Coordinating Council (Interconnection – wide)
 - Sub-regional transmission planning groups
 - Transmission providers
- Utility long-term supply plans guide what resources are developed and where

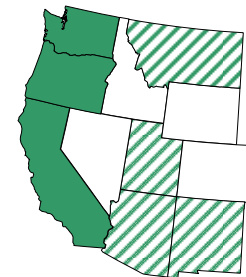
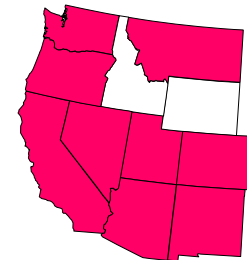
Excellent and Diverse Renewable Resources



Hydrokinetic

Renewable Resource and Carbon Regulation Policies

- 9 Western states adopted renewable portfolio standards
- Carbon limits in place in three states
 - Emission limits on resources serving customers (Emission Performance Standards)
 - Emission limits on new power plants sited in state
- British Columbia implemented first carbon tax
- 7 Governors and 1 Premier in Western Interconnection designing a regional carbon cap and trade system (Western Climate Initiative)



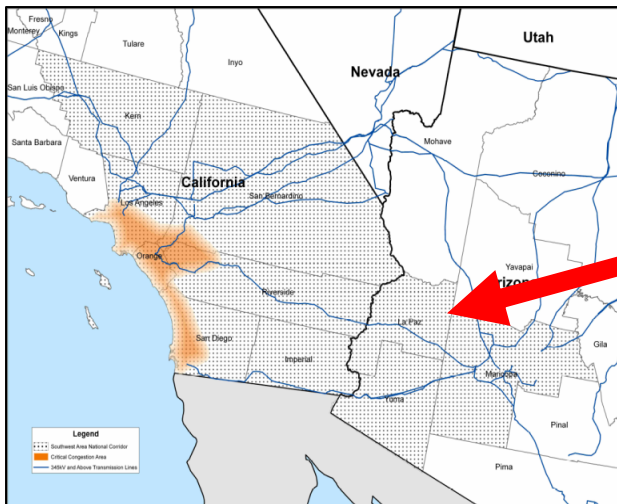
Existing CO2 power purchase or power plant siting limitations and participation in WCI



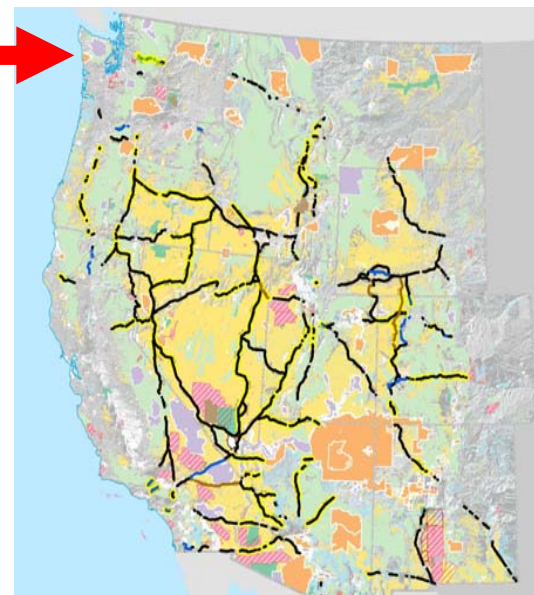
State Renewable Energy Zone Efforts

- Texas Competitive Renewable Energy Zones
- Colorado Senate Bill 91: Generation Development Areas
- California Renewable Energy Transmission Initiative
- Nevada Governor's Renewable and Transmission Task Force Study
- New Mexico Public Service/New Mexico Renewable Energy Transmission Authority wind collector system
- Arizona Renewable Areas Study

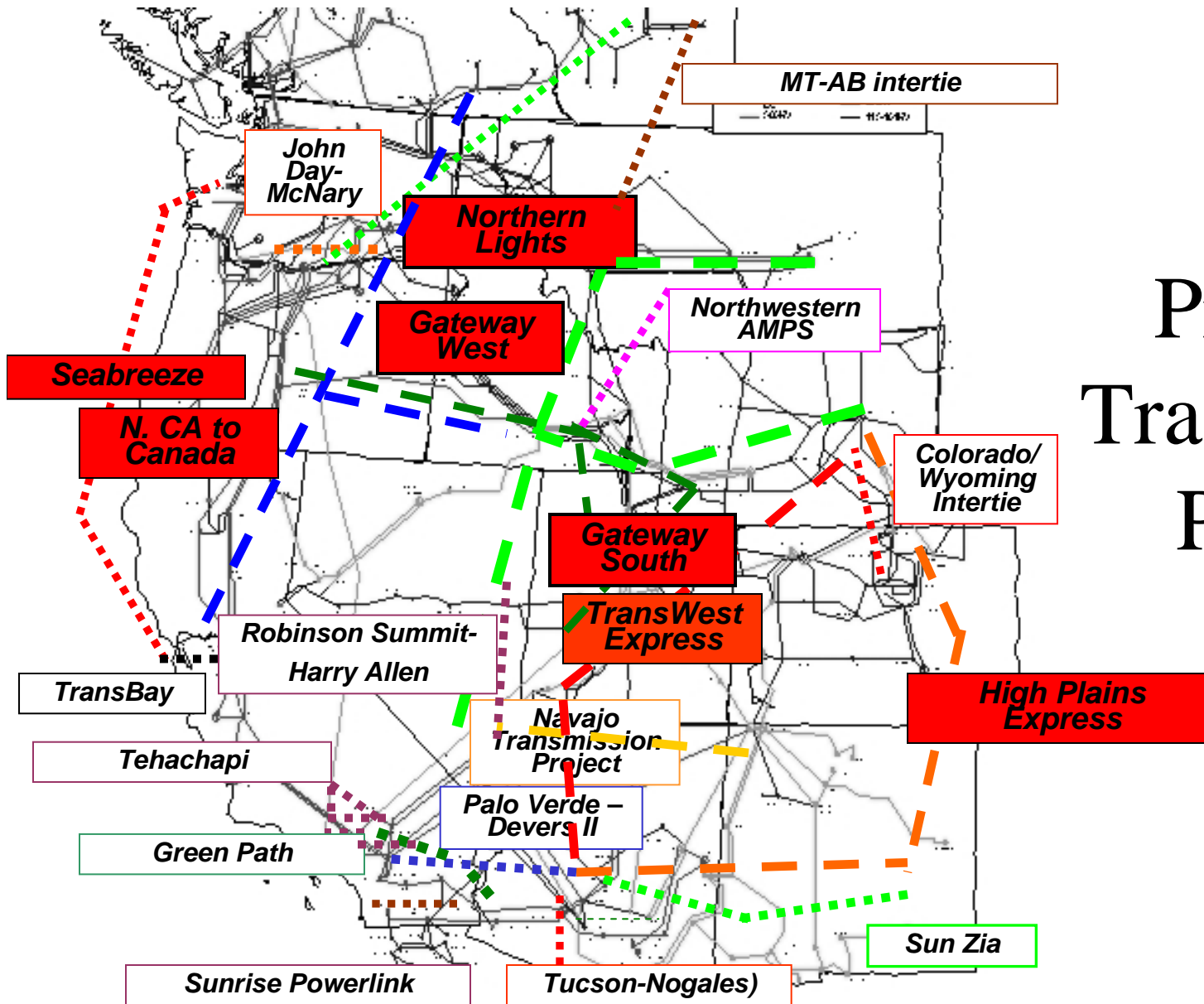
Federal Transmission Expansion Initiatives



- Designate energy corridors on federal lands (Section 368)
- Designate National Interest Electricity Transmission Corridors (Section 1221) and preempt state siting authority
- Provide higher rate of return on transmission investments
- FERC Order 890 planning requirements
 - Require transmission planners to evaluate lines to renewable resource areas



Major Proposed Transmission Projects





Reflections on Transmission Development

- Ultimately, LSE fuel choices will determine what transmission gets built
 - But LSE resource planning is done in company stovepipes often considering only near-by resources
 - PUC reviews of LSE resource plans are also done in company or state-by-state stovepipes
 - The current approach may miss good renewable options and balkanize the renewables markets
- Permitting, siting and cost allocation/recovery for new transmission will be challenging
 - But cost allocation may be easier than expected once LSEs decide which renewable resources they want to acquire
- Current system may undersize transmission to renewable rich areas



WREZ Project

- Genesis of Project
- Phases
- Timeline



Genesis of Project

- Offshoot of Western Governors' Clean and Diversified Energy Initiative (2006)
 - Goal of developing 30,000 megawatts of clean energy by 2015
 - Advisory Committee identified lack of transmission as key obstacle and made recommendations for reform
- September 2007: Western Governors' Summit on Transmission and Renewables identified WREZ project as a next step
- December 2007: Governors submit proposal to U.S. Department of Energy Secretary Bodman to fund WREZ project
- May 28 and 29, 2008: Kick-off meeting in Salt Lake City



WREZ Phases

- Phase 1
 - Identify developable renewable energy zones
 - Develop renewable resource supply curves for each zone
- Phase 2
 - Develop model to estimate delivered price of power from renewable energy zones to load centers
 - Develop conceptual transmission plans
- Phase 3 and Phase 4
 - Foster coordinated renewable resource acquisition
 - Facilitate interstate transmission for renewables



Key Elements of Phase 1 and 2

- Assess resources
- Conduct extensive environmental and land-use screens to identify what lands can be developed and what can't
- Define renewable energy zone characteristics
- Build on existing state renewable energy zone analyses
- Solicit maximum stakeholder input to identify renewable energy zones
- Integrate with existing sub-regional and WECC transmission expansion planning processes

Elements for Phase 3 and Phase 4 not defined



WREZ Schedule

- May 28 and 29 Kick-off meeting
 - Convened Steering Committee
 - Convened Technical Committee and formed work groups
- December 2008/January 2009
 - Identify candidate zones
 - Develop draft supply curves
- Remainder of 2009
 - Conclude Phase 1
 - Launch Phase 2
 - Develop a model to estimate delivered price of power from zones
 - Integrate WREZ work into sub-regional and WECC transmission planning



Potential WREZ Project Benefits

- Provide information to utilities and developers about costs of renewable power from different sites; optimum transmission needed to move renewable power to consumers; and potential partners in developing transmission to tap prime renewable resource areas
- Promote a regional view of renewables development (which is particularly important for development of remote renewable sites)
- Achieve widespread consensus on developable areas
- Pave way for interstate collaboration on permitting of multi-state power lines and cost allocation for new transmission
- Provide a foundation for new approaches to interconnection and transmission service queuing problems



Complementary Initiatives

- Western Transmission Scenario Analyses
 - Transmission needs to achieve a 15 % renewables target by 2020
 - Transmission needs to achieve a 15 % reduction in carbon emissions from 2005 levels by 2020
- Open Season Solicitations
 - Bonneville Power Administration
 - Wyoming/Colorado Intertie
- SW Solar/Wind Integration Study