

The (Proudly Dysfunctional) Western Interconnection

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January 23, 2012

New England Clean Energy Transmission Summit

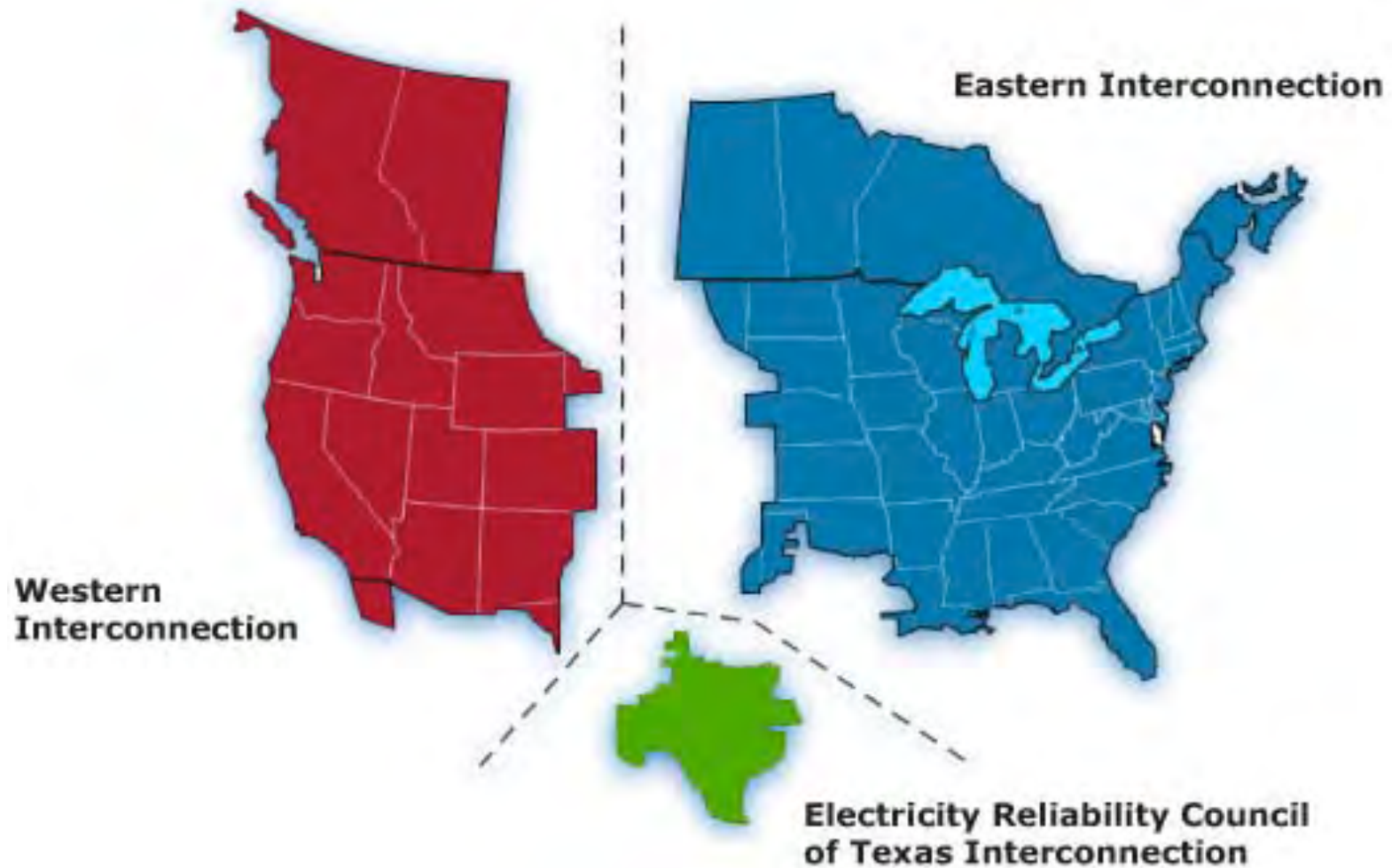


Seattle • Salt Lake City • Denver • Helena • Phoenix • Sacramento • Portland • Las Vegas • Lake Tahoe

Western Grid Group

- 200 years state regulatory experience
Former chairmen, staff of 8 western PSCs
- 50 years experience as wind, solar, geothermal, hydroelectric power developers
- Non-profit NGO; works with Governors, utilities, regulators, agencies, advocates
- Formed 2003 to develop policies to accelerate transition to sustainable electricity, win transmission access for clean resources

The grids



Western Interconnection

- 11 states
- 2 provinces
- a little bit of Mexico, Texas



The West is ... the West

- No one in charge = Everyone in charge
- Unorganized markets
- Much public power
 - PMAs (BPA, WAPA)
- Long distance transmission
 - Stability limits
- Excellent renewable resources
- Good regional forums
- Love/hate California



Generation procurement

- Drivers
 - RPS
 - Coal retirement
- Western Renewable Energy Zones (WREZ)
- Parochial states
 - Obstructions to regional markets
 - CA >50% western demand; limits imports
- Result
 - Balkanization



Transmission Planning

- RTEP first region-wide planning
 - DOE funded, specified
 - NGO participation
- No authority
 - Informative
 - Planners
 - Developers
 - Investors
 - Regulators
- Weakly integrated with generation planning
- Result
 - Higher level of information and understanding
 - More sensitivity to environment
 - Value of NGOs inside the tent



Transmission Operations

- 38 balancing authorities
- Bilateral markets and methods
- No energy imbalance/ancillary services market
- Some BA coordination
- Poor forecasting
- Result
 - Limited grid flexibility
 - Missed opportunities
 - Excessive reserves
 - Obstacles for renewables



Markets



- No organized markets*
- Bilateral markets
- No liquid markets
 - Energy, capacity, imbalance, RECs, ancillary services
- Result
 - Market inefficiencies—consumers pay too much
 - Underachievement of renewables
 - Excessive reserves

*Exceptions: California and Alberta

Transmission Siting

- Difficult
- Public lands
 - Forest Service, BLM
- Wildlife
 - Sage grouse
- Eminent domain
 - Unpopular, challenged



Reliability



- WECC
 - Only region-wide entity with authority
 - Stakeholder governance
 - Lowest common denominators
 - Big Tx owners most powerful
 - Recent AZ/SoCA blackout
- Results
 - Weak NGO participation
 - Incremental change
 - Weak environmental voice

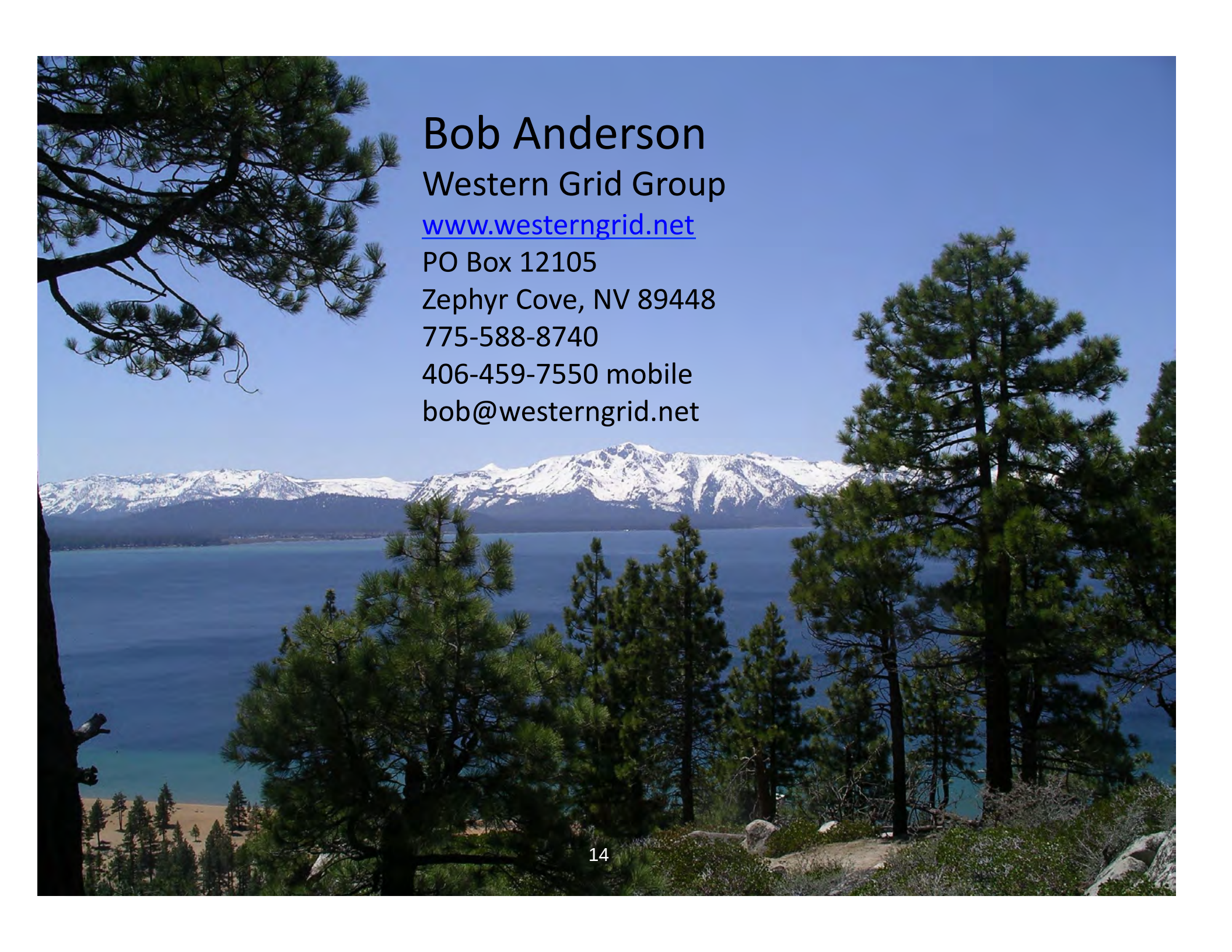
Western Grid 2050:

Contrasting Futures, Contrasting Fortunes

- Better than Business-as-Usual
 - Jobs & economy
 - Security
 - Public health
 - Water use
 - Land use
- Meets carbon goals
- www.cleanenergyvision.org/





A scenic landscape photograph of a lake and snow-capped mountains. In the foreground, several tall, dark green pine trees are visible, some framing the view. The middle ground shows a calm, blue lake reflecting the sky. In the background, a range of mountains with significant snow cover stretches across the horizon under a clear blue sky.

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