Western Electric Grid Evolution

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CSG West
The North American Electricity Grid

AC-DC-AC interconnections
- Western-Eastern
- Texas-Eastern
Regional Transmission Organization (RTO)

• A public-benefit corporation that manages the transmission system in a broad geographic region. Created and authorized by FERC Order 2000.

• Four characteristics:
  – Independence,
  – Scope & Regional Configuration;
  – Operational Authority;
  – Short-term Reliability
Regional Transmission Organization (RTO)

• Accomplishes its mission through a minimum of 8 functions:
  – Tariff Administration & Design (eliminates pancaking)
  – Congestion Management
  – Parallel Path Flow management
  – Ancillary Services (real-time market)
  – OASIS
  – Market Monitoring
  – Regional Transmission Planning
  – Interregional Coordination
The North American RTOs

CONNECTING CLEAN ENERGY IN THE WEST
Energy Imbalance Market (EIM)
- Realtime bulk electricity trading
- Operated by CAISO
- Not an RTO

Mountain West Transmission Group
- Public Service of Colorado, WAPA, TGT
- full RTO as part of SPP
- PSCO pulled out of planning

Extended Day-Ahead Market (EDAM)
- Experience in RTOs suggest EDAM might clear 4-5 times as much generation as EIM
- Operated by CAISO
Does the West Need an RTO?

- Large baseload generators retiring
- Large amounts of VER coming on as replacement
- Several states legislating 100% clean energy goals by 2050

- Fast ramping generation needed.
- Outlet for excess solar/ wind production.
- Existing transmission not always in right places..

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Western Interconnection Gas-Electric Interface Study, WoodMac, June 2018
Regional Coordinator – A Reliability Issue

- “Air traffic controller” for electric grid operation.
- Two competing RTOs have obtained certification in the West
- Potential for “seams” problems
- Warrants close monitoring by NERC and state PUCs.
Questions?

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