Overview of Electric Transmission in the West
Planning • Siting • Issues

February 7, 2012
- What does Transmission Look Like?
- Why is Transmission Important?
- Transmission Planning
- Transmission Siting
- Select Transmission Issues
- References
What does Transmission Look Like?

Typical Transmission and Distribution Structures

- Single-Circuit 500 kV Steel Pole Structure
- Double-Circuit 345 kV Steel Pole Structure
- Double-Circuit 230 kV Steel Pole Structure
- Single-Circuit 138 kV Wood or Steel Pole Structure at 30' Spacing
- Single-Circuit 138 kV H-Frame Structure at 60' Spacing
- Single-Circuit 69 kV Wood Pole Structure
- Two-Story House
- Single-Circuit 12 kV or 34.5 kV Wood Pole Structures

Transmission and Sub-Transmission Lines

Distribution Lines
Why is Transmission Important?

- Provide affordable/reliable electricity
- Implement public policies
  - Renewable energy (RPS, PTC, ITC)
Transmission Planning (West)

- Regional (WECC)
- Subregional (Subregional Planning Groups)
- Local (Transmission Providers)
Regional Transmission Planning

Path Groups within the WECC Boundary
Subregional Planning Groups (SPGs)

- Alberta Electric System Operator (AESO)
- BC Coordinated Planning Group (BCCPG)
- ColumbiaGrid
- California Independent System Operator (CAISO)
- California Transmission Planning Group (CTPG)
- Colorado Coordinated Planning Group (CCPG)
- Northern Tier Transmission Group (NTTG)
- Sierra Subregional Planning Group (SIERRA)
- Southwest Area Transmission (SWAT)
Transmission Siting

LOCAL PLANNING

PROJECT SITING
Select Transmission Issues

- Reliability
- Environment
- Cultural
SELECT TRANSMISSION ISSUES

Reliability

Federal Energy Regulatory Commission (FERC)
- Designated NERC as the Electric Reliability Organization (ERO) for the US
- Regulates the interstate transmission of electricity and oversees NERC in US

North American Electric Reliability Corporation (NERC)
- Develops and enforces mandatory reliability standards for North America
- Coordinates reliability through 8 Regional Reliability Organizations (RROs) like WECC

Western Electricity Coordinating Council (WECC)
- RRO for Western US; develops regional criterion and standards
- Can be more restrictive than NERC

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Reliability
Environment
References

- Western Electricity Coordinating Council
  "RTEP, 10-Year Plan, Project Information Portal, etc."
  http://www.wecc.biz/Pages/Default.aspx

- Eastern Interconnection Planning Collaborative
  http://eipconline.com/

- 2009 MOU – Coordination in Federal Agency Review of Electric Transmission Facilities on Federal Land
References

- Rapid Response Team for Transmission
  [http://www.whitehouse.gov/administration/eop/ceq/initiatives/interagency-rapid-response-team-for-transmission](http://www.whitehouse.gov/administration/eop/ceq/initiatives/interagency-rapid-response-team-for-transmission)

- 2011 Federal Energy Regulatory Commission Order No. 1000 – Transmission Planning and Cost Allocation

- 2012 National Electric Transmission Congestion Study
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