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 128 kV H-Frame Structure at 600' Spacing
- Single-Circuit 64 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)

**Why is Transmission Important?**
Transmission Planning
Transmission Planning (West)

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

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<tr>
<th><strong>Federal Energy Regulatory Commission (FERC)</strong></th>
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<tr>
<td>Designated NERC as the Electric Reliability Organization (ERO) for the US</td>
<td>Regulates the interstate transmission of electricity and oversees NERC in US</td>
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<th><strong>North American Electric Reliability Corporation (NERC)</strong></th>
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<td>Develops and enforces mandatory reliability standards for North America</td>
<td>Coordinates reliability through 8 Regional Reliability Organizations (RROs) like WECC</td>
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<th><strong>Western Electricity Coordinating Council (WECC)</strong></th>
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<td>RRO for Western US; develops regional criterion and standards</td>
<td>Can be more restrictive than NERC</td>
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Environment
Cultural
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
Thank You!

Robert Henke
ICF International
8310 S. Valley Hwy.
Suite 240
Englewood, CO 80112

www.icfi.com
rhenke@icfi.com
303-792-7810 (office)
303-520-9051 (cell)