Processes for Planning and Permitting Electric Transmission Projects in California

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Transmission Permitting Jurisdictions

• CAISO – approves projects for recovery through transmission charges, but does not permit
  – Approves transmission plans of service
  – What electrical upgrades are needed to add the line to the system?
  – Economic and reliability analysis to determine value of line to system
  – Does not physically site transmission or conduct environmental review
• CPUC
  – Permits transmission facilities greater than 50 kV
  – Exemptions per General Order 131-D
• CEC
  – Permits thermal facilities greater than 50 MW, including solar thermal, including gen-tie from facility to first point of interconnection
• County
  – Permit all wind facilities, solar PV, and solar thermal less than 50 MW
• Federal agencies (BLM, U.S. Forest Service)
  – Permit generation and transmission facilities on federal lands – NEPA review, Record of Decision
Simplified Electric Delivery System

Generator

Substation

Transmission Towers and Lines

Transmission 115, 230, 500 kV lines

Substation

Distribution (<50 kV)

Electric Consumer
Permitting Process at the CPUC

• Utility prepares Proponent’s Environmental Assessment (PEA) and preliminary engineering for project
• Utility communicates with CPUC 3 to 6 months before filing application for PTC* or CPCN** to ensure most complete application possible – prefiling
• Utility files PTC or CPCN application with the CPUC
• CPUC takes approximately 12 - 18 months to process the application – primarily determined by quality of PEA and CEQA review
• Utility takes 1 to 5 years to construct project, depending upon size and complexity

*PTC = Permit to Construct
**CPCN = Certificate of Public Convenience and Necessity
Prefiling Permitting Activities at the CPUC

Implemented on all projects starting late 2008/early 2009:

• Work with the applicant during the development of their alternatives
  – Understand the applicant’s logic for selection of alternatives
  – Possibly suggest alternatives that may reduce environmental impacts
  – CPUC staff does not approve the project or alternatives

• Collaborate on key observation points and methodology for visual simulations
  – Run simulations once

• Oversee biological and cultural surveys early
  – Conduct surveys once
CPCN Process

1. Utility Files: Application and Proprietor's Environmental Assessment (PEA)
   - PEA reviewed and deemed complete
   - Environmental review and public hearings
   - Draft Environmental Document (EIR or MND) issued
   - Comments on Draft EIR/MND
   - Final EIR/MND prepared
   - Proposed Decision
   - Comments on Proposed Decision
   - Final Decision and Final EIR/MND certified

2. Protests to Application Filed
   - Pre-Hearing Conference (PHC)
   - Scoping Memo
   - Public Participation Hearings
   - Testimony
   - Evidentiary Hearings
   - Briefs
Timeframe to Plan, Permit, and Construct a Transmission Line

<table>
<thead>
<tr>
<th>Planning</th>
<th>Permitting</th>
<th>Construction</th>
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</thead>
<tbody>
<tr>
<td>3 to 4 years</td>
<td>3 to 4 years</td>
<td>1 to 5 years</td>
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- Planning includes the CAISO’s identification of need for transmission additions and its evaluation of the proponent’s specific project. Permitting includes 1 to 2 years for the IOU to prepare a Proponent’s Environmental Assessment (PEA) and application. Average time for CPUC decision is 18 months (includes permits from Resource Agencies).
- Construction of all segments of Tehachapi will take approximately 5 years. Average construction time is approximately 1 to 2 years.
Permitting, Planning & Construction

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
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<tbody>
<tr>
<td>Planning</td>
<td>Issue ID</td>
<td>Planning Analysis</td>
<td>Planning Service</td>
<td>Planning Approval</td>
<td>CPUC and ISO Coordination Regarding Alternatives</td>
<td>Pre-CPCN Activities (Application/PEA)</td>
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1. This provides a best case scenario timeline. This timeline of activities can be generally applied to projects 30 to 150 miles in length, involves more than 3 local jurisdictions, 2 to 3 federal agencies, 1 to 3 state agencies, and more than 30 land owners. The planning process is a key uncertainty.

2. This timeline assumes a certificate of public convenience and necessity (CPCN) is needed.

3. Issue Identification: The transmission project may be needed for reliability, economic reasons, and/or for renewable resources.

4. Planning Approval: please see CAISO generator interconnection process and Order 890 planning process.

5. Pre-CPCN Activities include (a) project scope definition, (b) project study area definition, (c) environmental information identification and compilation, (d) informational exchange with community leaders, (e) consultation with land use and natural resources management stakeholders, (f) preparation of Proprietor's Environmental Assessment, and (g) preparation and filing of permit application.

6. CPCN Process: please see CPUC timeline. Actual schedule depends on, among other things, (a) environmental setting and potential impacts, (b) project complexity, and (c) level of public interest.

7. Post-CPCN Activities include right-of-way acquisition and resource agency permits acquisition. Additional time is needed if eminent domain action is necessary.
CPUC permitting process requirements

- CPUC permitting process considers three major questions:
  - Need for the project
  - Environmental impact
  - Reasonable cost

- CPUC and CAISO working together ensure the transmission planning process includes analysis necessary for the permitting phase
Permits typically required after the CPUC issues the CPCN or PTC

State Resource Agency permits to be obtained by the applicant:

- **State Water Resources Control Board (SWRCB)**
  - Section 401 Water Quality Permit (Clean Water Act)
  - Needed if there are potential impacts to waters of the state
  - Issued after the Project is Approved

- **California Department of Fish and Game (CDFG)**
  - Section 1602 Streambed Alteration Agreement (SAA) (Fish and Game Code)
  - Needed if project activities are within 100 ft of a water body or have the potential to affect the water body
  - Issued after the Project is Approved
Permits Approved since 2004 for Transmission to access Renewable Generation

- Tehachapi
  - 11 transmission segments; accesses 4,500 MW
  - Construction begun; completion expected 2015
- Devers-Colorado River (formerly D-PV2)
  - ~150 Miles; access 1,200 MW
  - Construction begun; completion expected 2013
- SDG&E Sunrise Power Link
  - ~120 miles; accesses 1,000 MW
  - Construction begun; completion expected 2012
- SCE Ivanpah Project
  - ~26 Miles; accesses 1,400 MW
  - In Permitting, Completion expected 2013
Substation Permits Under Review or Recently Completed by the CPUC

• SDG&E ECO Substation
  – Accesses 1,625 MW
  – CPUC & BLM issued FEIR/FEIS October 14, 2011
  – CPUC Decision expected January 2012

• SCE Red Bluff Substation and Colorado River Substation expansions
  – Interconnection of several 1,000s of MW
  – CPUC Decision issued July 14, 2011
Coordinating generation and transmission planning

- CPUC and CAISO signed Memorandum of Understanding on May 13, 2010
- MOU agreed on certain elements of the ISO’s revised Transmission Planning Process as part of mutual sharing and use of transmission and resource planning information
- Commits to closer coordination between generation resource planning and transmission planning
  - Desire to “work together to coordinate the ISO’s revised transmission planning process and identification of needed transmission infrastructure with the CPUC’s subsequent siting/permitting processes”
  - Renewable generation scenarios developed by the CPUC “will assist the ISO in identifying transmission projects needed under various renewable generation location assumptions and developing a comprehensive transmission plan”
CPUC generation resource planning efforts

- CPUC’s biennial long-term procurement plan (LTPP) proceeding authorizes procurement of new generation resources
  - 2010 LTPP considers resource needs through 2020
  - 33% RPS is a key driver of the amount and type of generation utilities may need
- “Umbrella” proceeding considers forecasted levels of energy efficiency, demand response, distributed generation, utility-scale renewables, and fossil generation retirements, which determine overall procurement need
- CPUC must consider these same resource alternatives when assessing the need for individual transmission projects
CPUC and CAISO use of 33% RPS Scenarios

• CPUC staff developed four renewable generation scenarios, representing possible 33% RPS futures in 2020
  – Considering transmission constraints, cost, commercial interest, environmental concerns
  – Scenarios vary by technology, location, and other characteristics
  – CAISO performed extensive system operational analysis on each of the scenarios to determine the resources needed to integrate 33% renewables

• Continuing close CPUC-CAISO collaboration on generation planning assumptions is needed to ensure timely access to resources needed for a 33% RPS
Importance of coordinated planning

• Several scenarios for potential renewable generation build-out are under consideration in LTPP

• Transmission “need” to be tested against several generation scenarios to ensure transmission needed under multiple scenarios
  – “chicken and egg” problem
  – no need to build transmission where there are no viable renewable projects

• Using common renewable scenarios across generation and transmission planning processes allows for a smoother and coordinated CPUC “need determination” in the permitting process

• Coordinating assumptions also leads to reduced risk of legal challenges on CPUC need determination
  – CPUC must adhere to statutory requirements to consider alternatives to the proposed transmission project under review
More Information

CPUC RPS Website:
www.cpuc.ca.gov/renewables

Transmission Siting and Environmental Permitting:
http://www.cpuc.ca.gov/PUC/energy/Environment/

Long-Term Procurement Plan proceeding:
http://www.cpuc.ca.gov/PUC/energy/Procurement/LTPP/

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Background Material
on Transmission Planning
Other Permits that may be Required to site transmission - State

- California Department of Fish and Game (CDFG) - Fish and Game Code 2080.1 Consistency Determination
  - Required if the project may result in take of species that are both federally and state-listed
  - Applicant requests that CDFG review the BO issued by USFWS to determine if conservation measures in BO are acceptable
  - CDFG has 30 days from receipt of the request to review the BO and issue a determination

- California Department of Fish and Game (CDFG) – Section 2080 Take Permit
  - Required if project has potential to result in take of a state-only listed endangered species or threatened species
  - Applicant submits application to CDFG to identify mitigation measures to reduce, avoid and minimize the potential for take.
  - Authorization received from CDFG in approximately 30 to 90 days, depending upon the species involved and complexity of the project.
Other Permits that may be Required to site transmission - Federal

- Army Corps of Engineers (ACE)
  - 404 Permit (Clean Water Act)
  - Needed if placement of dredge material into US waters, including wetlands
    - Nationwide permit (NWP) – less than 5 acres
    - Regional or individual permit – more than 5 acres
  - Takes approximately 9 months (NWP) to 15 months (regional permit) from when the application is submitted

- United State Fish and Wildlife Service (USFWS)
  - Section 7 consultation (Federal Endangered Species Act)
  - Biological Assessment (BA) is prepared by the applicant and submitted to the ACOE (for river & wetland modification)
  - USFW issues a Biological Opinion (BO) – issued within 135 days of acceptance of the BA
Transmission Projects in Process

• ISO has preliminarily identified several projects that would serve a 33% RPS:
  • Pisgah – Lugo 500 kV line (SCE)
  • Cool Water – Lugo 230 kV line (SCE)
  • West of Devers 230 kV reconductoring (SCE)
  • Path 42 (IID – SCE) upgrade
  • Carrizo-Midway 230 kV project (PG&E)
  • Numerous other smaller projects

• CPUC working with ISO to ensure that review of transmission lines will meet needs of CPUC in permitting process – reliance on Interconnection Agreements not sufficient
Transmission Application at the CPUC

- Nevada Hydro Company’s Talega-Escondido/Valley-Serrano 500kV Interconnect Project
  - CPCN Application
  - Design capacity 1,000MW
  - 32 miles long
Major Players in Transmission Policy and Planning (State)

- **State**
  - **CAISO** (under FERC jurisdiction): manages most of the California grid; oversees transmission planning and generator interconnection within its control area.
  - **CEC**: permits thermal generators > 50 MW, designates in-state transmission corridors.
  - **CPUC**: permits IOU-owned transmission; intervenes and represents Californians at CAISO & FERC; administers RPS, DSM and other resource procurement policy with which transmission expansion must be coordinated.
  - **RETI** (Renewable Energy Transmission Initiative): collaborative process to identify transmission needed to meet California’s clean energy goals, beginning with the identification of renewable energy zones. *Currently on hiatus as RETI’s work is incorporated into formal proceedings.*
  - **CTPG** (California Transmission Planning Group): joint effort by California IOUs, POUs and ISO to coordinate their planning efforts.
Major Players in Transmission Policy and Planning (Federal, Regional)

• Federal
  – **FERC**: regulates transmission access and cost recovery, and sets open planning standards
  – **DOE**: designates transmission and energy corridors to expedite permitting; oversees regional planning efforts
  – Various federal agencies: address permitting on federal lands

• Regional
  – **WECC** (Western Electricity Coordinating Council): west-wide electric reliability and grid planning, including coordination among varied transmission operators, owners and users.
  – Collaborative **western energy policy organizations**, especially those sponsored by the Western Governors’ Association (WGA) – typically interact extensively with WECC
  – **WREZ** (Western Renewable Energy Zones): WGA-sponsored project
  – **RTEP** (Regional Transmission Expansion Project): planning process overseen by WECC and WGA; will file 10-Year Plan to DOE this fall
California ISO Transmission Planning Process

• Major transmission additions typically require >5-year lead time
• CAISO approves projects based on:
  – Reliability (of service)
  – Economics (benefit vs. cost)
  – LCRI* (unique to California)
  – Interconnecting specific generator
  – New: policy needs (e.g., RPS)
• CAISO runs annual Transmission Planning Process (TPP) cycle with at least 3 open meetings and lots of documents, data & studies (challenging to track)
• CAISO oversees studies, develops annual plan, and approves projects for cost recovery via the ISO’s transmission access charge

*LCRI – Location-Constrained Resource Interconnection