Transmission Planning for Long-Term Horizon

Dariush Shirmohammadi
Director, Regional Transmission – South
Operations Committee Meeting
April 19-20, 2006
Objective

Present major transmission projects inside and into the CAISO controlled transmission grid that we expect to present to the CAISO Board within the next year.
MAJOR PROJECTS
RECENTLY APPROVED BY
THE CAISO BOARD

Jefferson - Martin 230 kV underground cable (Q2, 2006)

Trans Bay Cable (2009)

Rancho Vista Substation Project (2009)

Path 49 (EOR) Upgrades (Q4, 2006)

Palo Verde - Devers No. 2 Project (2009)
MAJOR PROJECTS RECENTLY APPROVED BY THE CAISO BOARD

1. Jefferson – Martin 230kV Underground Cable (Q2, 2006)
   - Sponsored by PG&E this project was justified based on reliability need.

2. Path 49 Short-Term Upgrade Project (Q3-4, 2006)
   - Sponsors by SCE, SDG&E and APS, this project was justified based on economic benefits of accessing inexpensive generation from Arizona to serve Southern California load and increasing the East of River (Path 49) rating by 505 MW to provide additional import capability into CAISO footprint.

3. Trans Bay Cable Project (2009)
   - Sponsored by Babcock & Brown and City of Pittsburg, this project was justified based on reliability need of San Francisco and Northern San Mateo County.

4. Rancho Vista 500/230kV Substation Project (2009)
   - Sponsored by SCE, this project was justified based on reliability needs of San Bernardino & Riverside Counties.

5. Palo Verde – Devers No. 2 500kV Line Project (2009)
   - Sponsored by SCE, this project was justified based on economic benefits of accessing inexpensive generation in Arizona to serve Southern California load and increases Path 49 (EOR) rating by 1,200 MW.
CURRENTLY PROPOSED MAJOR PROJECTS

Vaca Dixon 2nd 500 / 230 kV Transformer Project (2007)

Vaca Dixon – Lakeview 230 kV Reconductoring (2006)

Tehachapi 500 kV Transmission Infrastructure (2007-2011)

Vincent - Mira Loma 500 kV Project (2011)

LEAPS Project (2007 / 2009)

Sunrise / Green Path Project (2010)
CURRENTLY PROPOSED MAJOR PROJECTS

1. Vaca Dixon – Lakeview 230kV Reconductoring (Q2, 2006) - Board 4/06
   - Sponsor by PG&E, this Project was justified based on economic benefits of reducing RMR generation in the Bay Area.

2. Vaca Dixon 2nd 500/230kV Transformer Project (2007) - Board 4/06
   - Sponsored by PG&E, this Project was justified based on economic benefits of reducing RMR generation in the Bay Area.

3. LEAPS Project (2007-2009) - Board Q3, 06?
   - Sponsored by The Nevada Hydro Company and Lake Elsinore Valley Municipal Water District (EVMWD), this project is proposed to help meet SDG&E’s reliability needs, help CAISO southern grid reliability with operational flexibility (including storage capability) and help provide water quality and firefighting services.

4. Tehachapi Transmission Plan (2007-2011) - Board Q3, 06?
   - Sponsored by SCE, PG&E and Wind Generation Developers, this project is proposed to connect renewable generation (wind generation) and to meet PTO’s RPS goals.

5. Sunrise/Green Path Project (2010) - Board Q3, 06?
   - Sponsored by SDG&E and IID/Citizens Energy, this project is proposed to help meet SDG&E’s reliability need, allow access to ~3,000 MW of renewable resources (solar and geothermal) and to allow PTO’s to meet their RPS goals.

6. Vincent – Mira Loma 500kV Line Project (2011) - Board Q3-4, 06?
   - Sponsored by SCE, this Project is proposed to meet reliability need of upgrading the South of Lugo path to serve load in growing San Bernardino & Riverside Counties. In addition, this Project is also proposed to access the renewable energy (wind generation development in the Tehachapi area) to deliver to the L.A. Basin.
**FUTURE CONCEPTUAL MAJOR PROJECTS**

- **New Bay Area Substation**: 500 / 230 kV (2011?)
- **New South Valley Substation**: 500 / 230 kV (2011)
- **New 500 kV Lines**: (2011)
- **Wyoming Power Source**
- **Frontier Line Conceptual (TBD)**