2015 Transmission Project Update
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September 3, 2015

Presentation Overview

Overview of the Three Active Transmission Line Projects

- Palo Verde-Morgan 500 kV project
  - Closes a gap in the CAP transmission system (located in the Phoenix area).
- Hassayampa Tap – Sun Valley 230 kV project
  - Rebuilds the Hassayampa Tap (HT) switchyard.
  - Re-conductors the existing HT-Hassayampa Pump Plant (PP) line segment.
  - Construct 4,000’ of new double circuit transmission line and interconnects to the new Sun Valley Substation.
- Electrical District (ED)2 – Saguaro 115 kV rebuild project
  - Replaces the current poles and conductor due to age/reliability issues.

Financial Review of the Three Projects
Palo Verde-Morgan 500 kV Project

- This project was approved at the February 7, 2013, CAWCD Board meeting for $40,524,300.
- On May 24, 2013, CAWCD and APS entered into a contract to construct the 500-kV transmission line and associated substations that will connect the Palo Verde Switchyard to the Morgan Substation. CAWCD is a 10% owner of the project.
- This project will allow CAP to convey energy directly from NGS to CAP loads without having to contract and pay for capacity over other systems since there is a gap in the CAP system.
- This will improve the reliability of the CAP transmission system by providing a shorter direct line to the Hassayampa PP as well as providing an injection point into the Liberty/Parker Transmission line which serves the western pump plants.
- Lastly, this project will provide a direct link between Arizona’s primary trading hub – Palo Verde – and the Navajo Southern Transmission system.
This project was approved at the February 5, 2015, CAWCD Board meeting for $14,120,237. Western Area Power Administration will be the project manager.

The project will:
- Include the construction of a new Hassayampa Tap (HT) switchyard to include a more robust protection system.
- Re-conductor the existing HT-Hassayampa Pump Plant line segment. The existing towers are sufficient and can be reused.
- Construct 4,000’ of new double circuit transmission line from the existing transmission line to the Sun Valley Substation. This will provide the connection to the 500 kV system at the Sun Valley Substation.
**Hassayampa Tap-Sun Valley Locations**

- **Electrical District (ED)2 – Saguaro**
  - **115 kV rebuild project**

  - This project was approved at the May 2, 2013, CAWCD Board meeting for $11,785,000. Western Area Power Administration will be the project manager.
  - This line segment provides electric service to Brady, Picacho, and Red Rock Pumping Plants.
  - The project will replace the 35.6 miles of poles and conductor due to age/reliability issues.
    - From 2010-13 there were four failure events that cost more than $750,000 to repair.
    - According to Western it is one of the most unreliable lines in the Desert Southwest Region.
  - Currently the engineering is 95% complete.
  - The steel poles have been ordered and will start to be delivered in Q4 of 2015. The remaining materials will be delivered in Q1&2 of 2016.
  - Construction is scheduled to begin in Q3 2016 and is scheduled to be completed in Q2 2018.
Financial Review

- September 2015 CAWCD Board Transmission Project Review Plan
- September 3 Board Meeting:
  - Review scope and status of projects
  - Update on project financial status and forecasts
- September 17 Finance Power & Audit Committee:
  - Present draft of Official Statement for bonds
  - Discuss anticipated revenue bonding terms (duration, coupon rate, premium, debt service coverage ratio, etc.)

Process for Approving and Funding Transmission Projects

- Same process as other capital projects
  - Board approves project in budget
  - Board approves contract
  - Costs included in “Big R” to smooth out lumpy costs, consistent with CAWCD’s Board rate policy for stable and predicable rates
- Only process difference is the transmission projects’ size cause difficulties with the “Big R” smoothing process
  - Therefore two additional Board approval steps are added:
    - Board approval of Reimbursement Resolution
    - Board approval of revenue bonding
## Transmission Project Budget Versus Forecast

### 2014-2015

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<tr>
<th>Project</th>
<th>Budget Date</th>
<th>Amount Forecast</th>
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<tbody>
<tr>
<td>APS</td>
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<tr>
<td>Hassayampa Tap</td>
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<tr>
<td>ED2 to Saguaro</td>
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<tr>
<td>Total</td>
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### Contract Approval

- **APS to Morgan Transmission Line**
  - **Project business case: Project reliability**
    - Provides redundant transmission paths
    - Fills Westwing to Liberty gap
    - Provides Navajo power path Westwing to Hassayampa PP and Palo Verde to Hassayampa PP
    - Secondary benefit $500k/yr to $600k/yr lower net transmission expense (less Intertie costs)
  - **CAP 10% / APS 90% capacity share; CAP 11.7% / APS 88.3% cost share**
  - **CAP expenditures:**
    - ITD expenditures: $10.8M
    - Current budget: $40.5M
    - Forecast: $29.1M
### Hassayampa Tap

**Project business case: Project reliability**
- Same redundant, multiple paths and savings as APS project
- Both APS and Hassayampa Tap projects are needed to complete the new transmission path and achieve the benefits

**CAP 85% / WAPA 15% cost share**

**CAP expenditures:**
- ITD expenditures: $0.0M
- Current budget: $10.0M
- Forecast: $16.0M

### ED2 to Saguaro

**Project business case: Project reliability**
- Replace 30-year old wood monopoles, prone to failure in storm events, with steel poles
- Avoid emergency pole replacement ($750k for 2010-2013)

**CAP 60% / WAPA 40% cost share**

**CAP expenditures:**
- ITD expenditures: $1.8M
- Current budget: $10.7M
- Forecast: $11.0M
### Project Expenditures

#### Transmission Project Expenditure Profile ($000)

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Cumulative amount related to bonding: $4,468 $22,524 $29,086 $46,309 $53,297 $51,829 $51,829

Board March 6, 2014 Board Reimbursement Resolution allows for bonding proceeds to cover project costs starting in 2014.

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**Questions**