

Mike Bell Management Consulting (MBMC) review of Strategic Resources Advisors' (SRA) Analysis Economic Viability of the San Luis Transmission Project

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MBMC Scope and Objectives

- Independent analysis of Strategic Resource Advisors (SRA) methodology, assumptions, calculations, results and conclusions
- Verify that under reasonably conservative assumptions the San Luis Transmission Project makes economic sense
- Determine if partnership with Duke American Transmission Company (DATC) is an option equal to or better than SLDMWA pursuing the project on its own
- Recommendations for next steps, if any

MBMC Presentation Approach

- Considerable time spent with Patrick Mealoy (SRA) reviewing methodology, models employed, assumptions, analysis results, and conclusions
- This presentation will include pertinent high-level material prepared by SRA, but has been shortened from its original version to meet time constraints
 - MBMC slides are blue
 - SRA slides are black
- MBMC thoughts, opinions, and conclusions will be presented throughout the presentation for the benefit of SLDMWA

SRA's Structured Analysis:

- Objective
- Report Approach
- Bureau Of Reclamation (BOR) Pumping Loads
- CAISO Transmission Access Charge (TAC)
- PG&E Low Voltage (LV) TAC
- CAISO Non-TAC Charges
- Forecasted Future BOR Costs
- Net Present Value (NPV) of Future BOR Costs
- Alternative Comparison

SRA Objective

- Development of expected future costs for BOR loads at San Luis, O'Neill, and Dos Amigos under two scenarios
- Provide a realistic forecast of future costs under the current market and transmission service structure for BOR
- Identify the present value of the future payments under the scenarios being considered
- Serve as preliminary analysis/documentation to support a potential financing of the San Luis Transmission Project (SLTP) by DATC
- Other purposes of value to DATC and the SLTP Principals

Recent BOR Loads @ San Luis, Dos Amigos & O'Neill



BOR Load Takeaway

- Recent volatility in load is likely to continue due to climate change and pumping restrictions
- Counting on long-term historical average pumping load (465.7 GWH) is probably too optimistic
- SRA has assumed 415.5 GWH, 71 of which is at O'Neill in it's analysis. This is a reasonably conservative assumption

SRA's Analysis of BOR Transmission Cost

- Two models employed:
 - SRA rate base model
 - CAISO provided model
- Key components of future cost:
 - CAISO High Voltage Transmission Access Charge (HVTAC)
 - PG&E Low Voltage Transmission Access Charge (LVTAC)
 - Other CAISO costs

Historic CAISO HV TAC



CAISO Historical Information- Last 10 Years

- Transmission Access Charge has increased slightly over 800%
- Transmission Revenue Requirement has increased slightly over 900%
- Load has increased 11.7%

SRA Rate Base Assumptions are Conservative

- In the long-run analysis SRA assumed rate base growth of:
 - Base Case 55% of the 10 year average (throwing out the two highest years, resulting in approximately 5% annual growth)
 - Low Case 35% of the 10 year average (throwing out the two highest years, resulting in approximately 3.3% annual growth)
 - High Case the 10 year average (throwing out the two highest years, resulting in approximately 9.1% annual growth)
- Use of publicly available information from investor/regulatory and other public sources coupled with conservative assumptions going forward and a long history of TAC changes gives this forecast high reliability in MBMC's opinion

Model Approach #1 – SRA Rate Base Model

 SRA model is based upon the California Participating Transmission Owners (PTO) current www.selfacture.com bas bas





FOURTH QUARTER EARNINGS CALL February 9, 2018



Fourth Quarter and Full Year 2017





February 22, 2018

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Model Approach #1 – SRA Rate Base Model



SRA CAISO Model Runs

- SRA ran nine different scenarios in the CAISO model
- Three are considered to be most relevant to this analysis by MBMC:
 - CAISO base case
 - Case 4: Adjustment to Transmission Revenue Balancing Account Adjustment (TRBAA) for Energy Imbalance Market (EIM), longer term rate base investments at 75% of historic norms
 - Case 8: Case 4 plus a conservative portion of new capital for projects to meet:
 - 50% Renewable Portfolio Standard (RPS) requirements
 - New transmission investments identified by California Council of Science and Technology anticipating the closure of Aliso Canyon
 - Inclusion of bulk storage costs in HVTAC

Model Approach #2 – CAISO TAC Model (Probable Cases)



Comparison of Models

- MBMC places more confidence in SRA rate base model
- As SRA points out, there are many shortcomings in the CAISO model, "including depreciation, existing load, RPS levels, load growth and others"
- SRA model goes through 2051, CAISO model through 2031
- SRA's modifications to the CAISO model are reasonable and conservative
- CAISO model results are consistent and supportive of SRA rate base model results

PG&E Low Voltage TAC-(Applicable to O'Neill)

• Like HVTAC, PG&E's LVTAC has increased substantially in recent years



SRA Assumptions for PG&E LVTAC

- PG&E LVTAC has a compound annual growth rate of 12.3% over that last 17 years
- SRA has assumed:
 - Base Case low end of wall street guidance for next 5 year, then 5% thereafter with 1% annual load growth
 - Low Case 85% of wall street guidance for next 5 years, then 3.3% thereafter with 1.5% annual load growth
 - High Case high end of wall street guidance for next 5 years, then 9% (weighted utility average) thereafter to support 2.5% annual load growth

Forecast of PG&E LV TAC



CAISO Non-Transmission Access Charges

- There are numerous other charges that load in the CAISO pay including:
 - Resource Adequacy
 - Ancillary Services
 - Grid Management Charge
 - Congestion Charges
- It is more difficult to forecast future CAISO non-TAC charges as there are multiple variables without a significant amount of transparency in future pricing
- There are multiple changes occurring in the CAISO markets with regard to requirements for flexible resource adequacy, higher Resource Adequacy levels, more Ancillary Services during ramp periods, all of which should significant alter costs for load within the CAISO BAA
- At present these uncertainties have not been fully quantified and forecast does not include a significant change in Ancillary Services or Resource Adequacy costs

SRA CAISO Non-TAC Charges

• Resource Adequacy (RA)

- Base Case higher than historical levels to recognize evolving market issues, escalated at 3%-7.5% to reflect evolving near-term market needs
- Low Case Start near WAPA average, escalated at 2%-5%
- High Case Market level escalated 3%-5%
- Non-RA (ancillary services, grid management charge, congestion charges)
 - Base Case historic levels
 - Low Case 50% of historic levels
 - High Case historic levels

Potential CAISO Non-TAC Charges



Analysis Results

- CAISO and SRA models produce similar results
 - Annual cost in initial years between \$10-\$20 million
 - Annual cost longer-term (SRA model only) \$10-\$50 million
- SLTP annual cost as SLDMWA stand alone funding is estimated to be approximately \$18.8 million at 4% borrowing cost
- SLTP annual cost with DATC is estimated to be approximately \$18 million

SLTP Comparison to Status Quo

- Base Case ~ 2034 (10 years)
- Low Case ~ 2053 (30 years)
- High Case ~ 2027 (5 years)

SLTP Comparison to Status Quo



Additional Potential Economic Considerations

- Treatment (savings) related to San Luis generation
- Ability to implement storage/arbitrage with SLTP
- Third party transmission sales
- Price certainty
- New PG&E or CAISO based costs

MBMC Conclusions

- SRA Analysis:
 - Sound methodology emphasis on using actual forecasts produced by LSE's and used in public disclosure filings
 - Conservative assumptions discounted from well documented historical averages
 - Consistent results between models and compared to MBMC analysis
- There is potential for other benefits in addition to the estimated \$800,000 annual savings not included in the SRA analysis as identified (third party sales, San Luis generation, storage potential)
- MBMC finds the Base, High, and Low SRA cases to be highly credible and sufficient for use in funding the project

MBMC Conclusions

 If SLDMWA determines the payback scenarios to be reasonable it would make sense to proceed with project planning and contract negotiations