

APPROACH & SCOPE CLARIFICATIONS

PROJECT APPROACH

Burns & McDonnell has reviewed the Scope of Work as written within the RFP, presentation outline, and the supplemental request for presenting options for completing the Scope of Work. The Scope of Work as defined is very similar to Burns & McDonnell's typical scope of work for similar efforts regarding electric utility master planning or integrated resource planning. When selected, Burns & McDonnell will work with IPL to refine the scope of work as the study progresses, but overall the Scope of Work appears to be clear and thorough.

Burns & McDonnell offers the following clarifications regarding the options requested by IPL.

1. Deliverable 1: No clarifications submitted
2. Deliverable 2:
 - a. Burns & McDonnell Burns & McDonnell has included the optionality for IPL and Burns & McDonnell to utilize either Strategist (on a limited basis) or defined paths to conduct the portfolio optimization efforts. Burns & McDonnell and IPL will determine the most appropriate method of evaluation at the initial project kickoff or subsequent meetings, that will provide a robust evaluation, yet provide the most efficient means for completing the master plan.
 - b. Burns & McDonnell will evaluate alternative technologies through a preliminary screening assessment consisting of both qualitative and quantitative (e.g. LCOE) factors to reduce the number of alternatives evaluated.
 - c. Burns & McDonnell will work with IPL to evaluate power supply paths utilizing either Strategist or by developing 12 power supply paths to further evaluate by utilizing the results of the screening assessment. The 12 power supply paths or the Strategist model will consist of a variety of retirements for Blue Valley and the CTs, self-build on-system additions, and off-system power purchases to address the issues outlined within the RFP.
 - d. Burns & McDonnell will develop a "generic" market price forecast under base case assumptions utilizing PROMOD nodal to use within the economic evaluation for the 12 power supply paths or Strategist model. The market price forecast will be developed independent of the specific power supply paths under consideration. Sensitivities, that alter various base case assumptions, will be considered within Deliverable 4 as defined within the RFP.
 - e. The nodal analysis will be developed for the years 2020 and 2025 (the model years developed by SPP). For years between or beyond these two years, market prices will be interpolated based on natural gas price forecasts and other considerations as appropriate.
 - f. The market price forecast will be developed for both on-system (IPL) and off-system prices. The market price forecasts will reflect transmission congestion concerns across the SPP region.
 - g. The 12 power supply paths will be evaluated within an hourly dispatch model simulating the overall generation of the units against the generic market price (i.e. zonal analysis) or power supply paths will be developed within Strategist. Either method/model will account for fixed O&M, variable O&M, fuel, and capital investment/debt.
 - h. The power supply paths will be evaluated using an economic evaluation to further screen from 12 paths to four (4) paths or Strategist will be utilized to identify four (4) paths. The economic evaluation will assess the overall NPV, annual costs, and other factors (e.g. implied capacity value) for selecting the four (4) preferred paths for further evaluation.
3. Deliverable 3: No clarifications submitted



APPROACH & SCOPE CLARIFICATIONS

(continued)

5. Deliverable 4:
 - a. After completing the economic evaluation of the 12 power supply paths, Burns & McDonnell and IPL will select four power supply paths for further evaluation or select four (4) paths from the results of Strategist.
 - b. Burns & McDonnell will develop a series of generic market price forecasts (the base case plus three sensitivity/future scenarios) with PROMOD nodal. For example, the future scenarios may consist of high/low gas prices, high market penetration of renewables, environmental regulations, and/or load scenarios. Burns & McDonnell and IPL will jointly develop the scenarios to be evaluated. This will consist of four nodal simulations.
 - c. Burns & McDonnell will develop market price forecasts for each of the sensitivity/future scenarios for both on-system and off-system prices.
 - d. The four power supply paths will utilize the results of the generic market price forecasts (as developed for future scenarios) to evaluate the overall economics of each of the paths under the sensitivity analysis in a similar approach to the base case assessment in Deliverable 2 (i.e. zonal analysis instead of nodal analysis for each power supply path).
 - e. To clarify, the market price forecast will be developed independently of the power supply paths. The alternatives within the power supply paths will be “dispatched” against the generic market price forecasts.
 - f. This approach provides a robust evaluation of the four selected power supply paths, without increased effort of simulating each path specifically within the nodal assessment (which is labor intensive).
6. Deliverable 5: Included within other deliverables
7. Deliverable 6: No clarifications submitted

