Electric Integrated Resource and Master Plan Scope of Work

Part I – Integrated Resource Plan

1. Conduct a load forecast of at least 5 years, but preferably 10 years or more to determine the electric energy and capacity requirements of the City of Columbia as a whole. Develop a model for which the City of Columbia may run scenarios based on values of different variables. Include the model as a deliverable. Disclose all assumptions utilized in the creation of the model.

2. Review all current generation and capacity import contracts. Indicate when those contracts that will need to be renewed and/or that may be approaching end of life. Evaluate the status of the contracts and address the options available to the City of Columbia regarding these contracts. Evaluate the marketability of the contracts.

3. Review local generation assets. Predict useful life remaining of current local assets using existing condition assessments or prudent industry standards. Examine the viability of maintaining ongoing operation of existing generation and compare to building new local generation or increasing portfolio of import contracts. Examine the costs and benefits of converting a retired local generation unit from coal fired boiler to biomass fired boiler. Examine the cost and benefits to convert gas turbine units to combined cycle units for improved efficiency and added capacity.

4. Develop a resource utilization plan. Identify the utilization of resources and types of units selected to meet future needs and other factors of interest to permit an understanding of the potential future resource needs. In the plan identify strategies that would meet or exceed the minimum renewable energy and greenhouse gas emission requirements established by the City of Columbia. Existing goal is for 15% renewables at present; 25% renewables by 2023; 30% by 2029; and potentially 100% renewables at some future date within the next 40 years. Take into account results of the City of Columbia's Climate Action and Adaptation Plan currently in progress. Currently adopted community wide greenhouse gas emission reductions levels are: 35% by 2035, 80% by 2050, & 100% by 2060. Currently electric use is credited with 45% of emissions.

5. Conduct sensitivity studies. Recommend sensitivities, to be examined. Include load growth, cost, reliability and resiliency, renewable expectations, climate regulation, and adoption of new technologies such as electric vehicle charging, increased use of heat pumps, and increased customer solar utilization as mandatory sensitivities.

6. Review current demand side reduction programs with regard to participation, participation potential, costs and results of the programs. Determine the appropriateness of existing demand and energy reduction programs and make recommendations regarding the continuation of these programs. Determine the impact to existing programs due to current and future state and federal efficiency standards, rebates, or tax credits. Recommend any new programs or technologies that would increase the effectiveness of demand side and energy reduction programs.

7. Evaluate the potential for expanded use of private and public distributed generation and storage to contribute to the energy and capacity requirements of the City of Columbia. Examine the effectiveness and appropriateness of distributed energy resources such as, but not limited to, neighborhood and rooftop solar arrays, energy storage, and industrial customer generation as a means to curtail energy and capacity requirements.

8. Evaluate CWL's position as a MISO member vs SPP. Evaluate and compare the availability of renewable energy in SPP and MISO.

9. Conduct a value of solar study. Evaluate how City of Columbia customers benefit from the proliferation of net metered solar including the solar incentive program costs and accounting for all costs, benefits, and opportunities involved.

Part II – Master Plan

1. Determine the load serving ability of the CWL service territory. Conduct a spatial load forecast to determine the localized load serving ability for various locations within the City of Columbia distribution service area. Take into account potential growth, redevelopment, and energy efficiency improvements, private solar generation, other private distributed generation, and proliferation of new technologies such as energy storage and electric vehicle charging stations when conducting the load forecast.

2. Determine the appropriateness of using battery storage, utility provided solar, or other distributed generation as options for serving local load serving ability needs. Include how these options could be used to prolong investments in the distribution system.

3. Review existing CWL standards for system reliability. Make recommendations to modify the City of Columbia electric engineering standards by taking into account economic viability, customer satisfaction, and best practices of the electric utility industry. Determine the risks associated with the standards. Document the standards in such a manner that they can be implemented as an official City of Columbia policy. Recommend a process in which standards are reviewed and updated. Document the NERC function types for which the City of Columbia is registered. Evaluate the appropriateness of each of these registrations.

4. Make recommendations regarding the expansion of the City of Columbia transmission system. Recommendations must take into account established NERC and other regulatory standards, requirements of the MISO ISO and established or modified CWL standards for system reliability. Evaluate CWL's transmission system as a MISO member bordering SPP and AECI territories and determine how that affects regulatory requirements. Address the needs of the transmission level interconnections with the University of Missouri and City of Fulton when making the recommendations.

5. Make recommendations regarding the expansion of the City of Columbia distribution system. Recommendations must take into account existing or modified standards for system reliability. Take into account the localized growth of the system to determine recommendations regarding how to provide adequate capacity for that growth.

6. Review the capital projects currently forecasted by CWL and determine if they are in keeping with the recommendations established by the master plan. Identify projects that may be unnecessary. Identify projects that might be considered to meet established recommendations. Determine the prioritization of these projects.

7. Review the costs and benefits of adaptation of AMI metering or other "smart-grid" technologies.

Part III – Cost of Service Plan

1. Perform a cost-of-service analysis. Review and evaluate the rate classes and structures and recurring fees associated with the electric utility. Make recommendations for changes to the rate structure. Identify and evaluate alternate rate structure strategies, such as time of use and demand charges that the City might consider. Comment on impacts experienced by other utilities in customer use behavior as a result of various alternatives.

2. Review City's current methodology - Review City's current practices for cost of service analysis, debt coverage calculations, cash reserve policy and rate design. Determine the utilities revenue requirements - identify revenue requirements for the test year and over a ten year planning horizon with consideration of historical customer data, usage and load. Calculate debt coverage ratios and rate adjustments to meet or exceed debt coverage ratio. Recommend the minimum cash reserve levels for the utility to sustain. Assure that recommended rate structure meets all financial requirements.

3. Provide Excel based cost of service analysis model looking forward 10 years. Model should be able to be used by City staff to run scenarios to determine results based on several variables. Provide training on use. Methodology used for key model drivers should be explained and easily replicated.

4. Identify costs associated with expansion of and connection to the electric system. Make recommendations on how to identify those costs. Make recommendations such that required capital growth is funded by the forces driving that growth.

5. Evaluate Revenue at Risk. Highlight the risks to revenue in all potential rate structures and make recommendations on how CWL might mitigate the risks to revenue. Potential risks could include lower than anticipated usage and proliferation of customer owned solar and energy storage . Evaluate how the City of Columbia's solar incentives affect this revenue at risk.

6. Provide a cost breakdown that shows the real cost of each utility program or service by rate class and rate structure. Provide revenue generated by each rate class and rate structure. Provide related budget line titles in FY19 budget covered by each rate class and rate structure.

7. Identify the effect of renewable targets on rates. Note that renewable energy sources should not cost more than 3% of all other energy or energy and capacity costs. Develop a method of determining the cost increase or savings of each resource based on current and potential contracts. Make a recommendation on whether a 3% maximum cost of renewables over other sources is achievable given the potential renewable targets of the City of Columbia.

8. Identify and evaluate other potential income sources, such as pole attachment fees and electric vehicle charging stations.

9. Conduct a study of financing programs. Recommend the feasibility of utility financing models such as PAYS, PACE, Utility On-Bill Financing, or others that could lower or eliminate ratepayer burdens caused by reduced energy sales from conservation, energy savings, or renewable energy programs.

Provide benchmark based on current charges compared to other utilities of similar size and geographic region.

Additional Typical RFP Items

Responsibilities of the Contractor

1. Provide weekly progress updates which include updated schedule, tasks worked on and completed in the previous week, and tasks scheduled for the following week. Information required from the City of Columbia, issues that may affect schedule, and risks that may affect successful completion of one or more parts of the project should also be identified.

2. Provide a final report containing results from all tasks identified in the Scope of Work. For engineering work, this report shall be stamped and certified by a Professional Engineer.

3. Attend several in person meetings with the Integrated Resource and Master Plan Task Force. The Task Force meets every fourth Thursday in the evening at 6 P.M. The purpose of these meetings will be to update the Task Force members on the progress of the project, answer questions, and address potential scope changes that may be necessary as information is gathered.

4. Attend City Council meetings as required including presenting final report

5. Appoint a single point of contact for interaction with the City of Columbia.

6. Provide a prioritized, detailed list of documents, data and any other materials that the City must provide to complete the contract once awarded.

7. Provide notification to City of any change of personnel assigned to the project.

Responsibilities of the City of Columbia

1. Provide any data, previous reports, assessments, studies, or other material that has been collected.

2. Provide detailed feedback on all work products.

3. Provide a single point of contact for interaction with the contractor.

Pre-Proposal Items

1. Restate the Scope of Work and identify the process in which the task will be completed.

2. Provide a milestone list and proposed schedule of completion of tasks.

3. Identify the key personnel that will be involved in the project and their role.

4. Identify other utilities of similar size for which the contractor has performed a project of similar scope that the City of Columbia may contact to reference the quality of the work performed.