



## **Comments on Proposed Variable Operations and Maintenance Cost Review**

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### **Middle River Power**

Middle River Power, LLC (“MRP”) is the asset manager for approximately 1,600 MW of generating facilities in California. The portfolio consists of ~1,150 MW of Combined Cycle Gas Turbine Units (High Desert Power and Tracey), ~200 MW of Peaking capability (Hanford and Henrietta) and 270 MW of geothermal. MRP is also developing a 100 MW solar facility adjacent to our High Desert facility in Victorville CA and manages other assets outside of California (CA).

### **Comments**

MRP is pleased to have the opportunity to submit comments on the January 8, 2019 Variable Operations and Maintenance (“VOM”) Cost Review Presentation which summarizes the December 26, 2018 Variable Operations and Maintenance Cost Review Report. MRP appreciates the CAISO holding a webinar on the new methodology and asks that the CAISO revisit the study prior to finalizing the new VOM costs for default energy bids. Generally, the resulting VOM costs developed by Nexant do not reflect the true cost of doing business in CA.

Nexant primarily relied on documentation that represented costs from other areas in the country, which are significantly lower than existing costs in CA, resulting in a VOM proposal that does not accurately reflect In-State costs. Nexant should complete a detailed analysis of costs associated with CA-specific natural gas and geothermal facilities. A more accurate assessment and/or baseline is needed to avoid a cumbersome process where each individual facility must establish a unit specific VOM or have their costs inaccurately represented within the default energy bid. Utilizing the CONE studies from NY, NE and PJM or other generic studies do not reflect CA costs.

VOM Costs are highly dependent upon plant configuration, location, chemical usage, water supply, discharge requirements, taxes and many other factors. MRP acknowledges the difficulty of classifying a highly variable group resources into a handful generic cost categories. As an example, two Frame Combined Cycle Gas Turbines (“CCGT”) may have very different costs simply based on their configuration and location. A wet cooled condensing unit (“WCC”) will have completely different VOM profile versus an air cooled condensing unit (“ACC”) in a similar location. It is unrealistic to expect the CAISO to have default parameters that will successfully capture every possible resources’ costs. That said, the VOM should be at least reasonable for the generation category and should use California specific costs and tax assumptions. One specific illustration that must be clearly acknowledged is that the cost of water in CA is far greater in in other parts of the country and this cost should be included in VOM. A similar approach applies to geothermal and simple cycle combustion turbine facilities as well.

MRP acknowledges the CAISO's preference to limit the number of VOM categories to those proposed in the Nexant report. However, MRP believes that is an oversimplification and many additional combinations of configurations for CT and CCGT classes are appropriate and necessary to be evaluated. Although administratively grouping gas turbines into eight different categories may seem reasonable, it fails to recognize the actual nature and complexity of the technology and the number of generic configurations that can apply to each category. For example, MRP can identify at least 32 different configurations for WCC and ACC units within a single category. The iterations include the following variables:

- Water Source
  - Domestic – wells, river, etc.
  - Outside supply – city, recycled water, etc.
- Water Treatment
  - Installed demineralizers, clarifiers, reverse osmosis, etc. (maintenance costs are highly variable based on systems used and water quality)
  - None
- Discharge Configuration
  - Zero Liquid Discharge
  - Ponds
  - Sewer
- Emissions Equipment
  - Catalysts
  - Burner configuration
  - Selective Catalytic Reduction

Any configuration of the variables mentioned above will impact facility costs. For geothermal facilities other variables apply and are highly dependent on geothermal resource, technology, and location.

In conclusion, MRP suggests the Nexant study be revised to reflect CA costs with additional configurations so these can be used as a reasonable baseline while establishing generator-specific VOM costs for default energy bids. MRP looks forward to working closely with the CAISO on this and other initiatives.