BEFORE THE
ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION
OF THE STATE OF CALIFORNIA

California Energy Commission
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In the Matter of:

Rulemaking to Consider Modification of Regulations Establishing a Greenhouse Gases Emission Performance Standard For Baseload Generation of Local Publicly Owned Electric Utilities

Docket No. 12-OIR-1

MODESTO IRRIGATION DISTRICT REPLY COMMENTS

The Modesto Irrigation District ("MID") provides the following reply comments in response to the *Request for Reply Comments* issued by Commissioner Weisenmiller on August 31, 2012, in the Rulemaking to Consider Modification of Regulations Establishing a Greenhouse Gases Emission Performance Standard (EPS) for Baseload Generation of Local Publicly Owned Electric Utilities. MID appreciates the opportunity to provide comments to the California Energy Commission (Commission) on the issue raised in the Request for Replies regarding potential revisions to the Commission's EPS Regulation.

In addition MID is a member of the M-S-R Public Power Agency (M-S-R), and supports and incorporates the comments filed by M-S-R in this Rulemaking and in response to Commissioner Weisenmiller's *Request*.

INTRODUCTION

MID is local publicly owned electric distribution utility located in the Central Valley. MID serves over 113,000 electric customers with a peak load of over 640 Megawatts (MW). MID maintains a diverse resource mix that includes hydroelectric generation and fossil fuel sources. It also has procured sufficient renewable energy resources to meet 27% and 29% of its retail load with renewable energy in 2012 and 2013 respectively.

MID has organized its comments into two categories: (1) a focus on the addition of generation to serve a utility's load reliably, and (2) the addition of generation required for the integration of renewable energy resources.

1. **BASELOAD PLANTS OPERATING AT LOWER LOAD AND LOAD FOLLOWING WILL NOT MEET A LOWER EMISSION PERFORMANCE STANDARD.**

As part of its electric resource procurement strategy to meet its load growth demands, in 2003 MID commissioned the in-area Woodland 2 Power Plant (Woodland 2), a natural gas 83 Megawatt (MW) LM6000 combined cycle power plant. The unit operates as a load-following baseload unit and has an emissions profile of approximately 1,000 CO_2 lbs/Megawatt-hour (MWh).

Aero-derivative power plants operate with some flexibility and capability to follow load. Woodland 2 is used to load follow because of its ability to quickly ramp up and down to the various load set points in an efficient and reliable manner. However, there is a trade-off when ramping the plant down in load, because the efficiency drops off as plant output is reduced. A load-following baseload power plant that uses aero-derivative technology will not be able to meet a newly reduced EPS as set forth in the *Request for Reply Comments*. The ability to ramp Woodland 2 up and down has become even more important to MID's system operations with the recent influx of intermittent renewable resources. The Woodland 2 plant can maintain this flexibility as a backstop for intermittent resources with the existing EPS, however, this ability will be compromised if the EPS is lowered as proposed.

2. **NEW COMBINED CYCLE PLANT USING AERO-DERIVATIVE TECHNOLOGY DOES NOT MEET THE 850 LBS CO_2/MWH MEASURE.**

The aero-derivative LM6000 technology (configured in combined cycle) is one of the best alternatives available for use by small to mid-sized utilities that want the latest technology available for local generation. Small to mid-sized utilities rely on local generation for local resource adequacy and reliable operation of their local electric grid (i.e. voltage support, and operational flexibility). In addition, it would not be prudent for a 700 MW peak-load utility to depend purely on remote generation such as the Lodi Energy Center (LEC) or to build a 300-500 MW facility to meet its load requirements.

MID does import a 30 MW share of the new LEC project, however because of its remote location, the LEC does not provide the same kind of local voltage support and operational flexibility that appropriately scaled local generation does. Combined cycle, aero-derivative power plants, similar to Woodland 2 make the most sense for in-area distributed generation and local resource adequacy purposes.

3. THE ELECTRIC GRID WILL NEED MORE HIGHLY FLEXIBLE GENERATION AS MORE RENEWABLE ENERGY RESOURCES ARE ADDED, AND ADDITIONAL FLEXIBLE GENERATION WILL REQUIRE MORE HOURS OF OPERATION.

The California Energy Commission addressed the need for more flexible resources in its July 2007 Intermittency Analysis Project Final Report, stating *"It is essential that this requirement for flexibility be included in the overall assessment and planning for resource adequacy."* As electric utilities move toward achieving a 33 percent renewable portfolio target, flexible resources will become more and more important for integration of these renewable resources. The Pacific Northwest is already experiencing serious deficiencies in its electric system because of the addition of enormous amount of wind power projects that fluctuate in generation instantaneously. The integration of the Variable Energy Resources into the Bonneville Power Administration balancing authority has led to the identification of potential changes in operations and business practices that may have to take place in order to accommodate the integration of future Variable Energy Resources and the process has identified that a significant investment in transmission infrastructure will have to be made in order to accommodate the addition of the Variable Energy Resources.

MID has negotiated several power purchase agreements with wind suppliers in California and the Pacific Northwest. It can serve 26% of its retail energy needs with wind energy. Several of the early contracts offered firming and shaping, however, the latest contracts with resources in the Pacific Northwest minimized this offering and MID now has to provide its own firming and shaping for the resources in order to accommodate the intermittent nature of the wind product. In addition, MID recently added a 25 MW solar photovoltaic (PV) facility to its RPS which will provide 2% of our

retail customer energy needs. MID is already experiencing the intermittent nature of the new PV resource on patchy cloudy days.

MID is maximizing the use of flexible natural gas fired generation to deal with these additions reliably and has recently added a natural gas fired, reciprocating engine facility to assist in the integration of the intermittent resources into MID's electric resource portfolio. As more of the intermittent resources are added, the use of flexible resources such as reciprocating engines will become foundational to the integration of such renewable resources. Reciprocating engine technology, while not currently considered baseload in operation, does meet the EPS Standard with an excellent net HHV heat rate of 8,425 BTU/KWhr. However, the reciprocating engine units will not meet the proposed lower EPS standard of 850 lbs CO_2/MWhr.

Prudent utility planning in California will need to take into account the impacts of additional intermittent resources (specifically wind and solar) that will be needed to achieve the RPS target. The lessons learned from the Pacific Northwest example are that the electric system will need a mix of resources in order to accommodate the variability in output from the intermittent resources. The costs of integration of renewable resources in California already come at a premium, and will only continue to rise as the demand increases and the means to deliver becomes more congested. Owning flexible resources like the combined cycle Woodland 2 Plant and the new reciprocating engine plant provide MID with the necessary flexibility and reliability to counterbalance the influx of new renewable resources. These local resources also reduce reliance on expensive interstate transmission resources and therefore, reduce costs for our local customers. The need for expansion of hard to build interstate transmission is also reduced by keeping a backbone of local generation close to the load. Lowering the EPS would harm reliability by limiting future "size-appropriate" options for local generation.

4. CONCLUSION

Placing an additional limitation on the Emission Performance Standard (EPS) will hamper local load reliability and the integration of renewable energy resources that are

intermittent in nature. Such restriction could have the unintended consequence of thwarting investment decisions by local governing boards regarding the addition of renewable resources due to the increase in costs, which could eventually become unsustainable by local customers. MID supports the current EPS of 1,100 lbs/MWh that was established through a compromise and balance of several issues, including financial implications and would not support a modification.

Respectfully Submitted,

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