

STATE OF IOWA  
DEPARTMENT OF COMMERCE  
UTILITIES BOARD

IN RE:  INQUIRY INTO FOSSIL FUEL GENERATION EFFICIENCY	DOCKET NO. NOI-07-1
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**ORDER DECLINING TO ADOPT  
PURPA STANDARD 13 AND CLOSING DOCKET**

(Issued August 7, 2008)

**I. INTRODUCTION**

On August 8, 2005, the Energy Policy Act of 2005 (EPACT 2005) was signed into law. Among the many provisions of this federal legislation are five new federal standards added to the Public Utility Regulatory Policies Act of 1978 (PURPA). Two of the new standards are entitled "Fuel Sources," commonly referred to as PURPA Standard 12,<sup>1</sup> and "Fossil Fuel Generation Efficiency," commonly referred to as PURPA Standard 13.<sup>2</sup> For each of the two new standards, all state utility commissions and utilities must consider and make a determination whether to adopt the standard.<sup>3</sup> The Utilities Board (Board) may decline to adopt or implement a standard, but must state in writing the reasons for its decision. The Board may also determine that it has previously adopted a standard by prior state actions.<sup>4</sup>

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<sup>1</sup> PURPA section 111(d)(12).

<sup>2</sup> PURPA section 111(d)(13).

<sup>3</sup> 16 U.S.C. 2621(a)-(c).

<sup>4</sup> 16 U.S.C. 2622(b)(3)(a).

On May 1, 2007, the Board issued an order in Docket No. NOI-07-1 that adopted PURPA Standard 12 and opened an inquiry into whether PURPA Standard 13 should be adopted. PURPA Standard 13 provides:

(13) FOSSIL FUEL GENERATION EFFICIENCY.  
Each electric utility shall develop and implement a 10-year plan to increase the efficiency of fossil fuel generation.

Generator efficiency is typically measured by heat rate and increasing plant efficiency is the ability to generate 1 kWh of electricity using less fuel than before the improvement, thereby reducing heat rate.<sup>5</sup>

The following persons participated in the inquiry: the Consumer Advocate Division of the Department of Justice (Consumer Advocate), Ag Processing Inc (Ag Processing), Interstate Power and Light Company (IPL), MidAmerican Energy Company (MidAmerican), Muscatine Power and Water (Muscatine), and the Iowa Industrial Energy Group (IIEG). Most filed written comments, which were either general in nature or responded to specific questions propounded by the Board in its order initiating the inquiry.

## II. SUMMARY OF COMMENTS

PURPA Standard 13 relates to fossil fuel generation efficiency. IPL, MidAmerican, and Muscatine maintain that market forces provide sufficient incentives to utilities to improve operational efficiencies, with one example being the existence

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<sup>5</sup> Heat rate, expressed in Btu/kWh, is the amount of energy (fuel input expressed in Btu) needed to generate 1 kWh of electricity.

of a Midwest energy market. MidAmerican cited its current revenue freeze as another incentive to improve efficiency and noted that the Board and Consumer Advocate currently encourage cost-effective measures to improve plant efficiency.

The IIEG said that operating efficiencies should be developed in Board proceedings involving new generation projects, not by implementing PURPA Standard 13.

Consumer Advocate urged that the standard be adopted, at least in part, and that the Board should also consider rules requiring the utilities to file integrated resource plans. Consumer Advocate acknowledged that it might be impractical and expensive to improve heat rates for older units, but that improvements should at least be considered.

IPL and MidAmerican both argued that establishing standards like those contemplated by PURPA Standard 13 would be difficult, create unnecessary administrative burden, and increase costs to consumers by adding additional labor costs for testing, tracking, and reporting. The IIEG also expressed concern about increased costs, which it said would ultimately be paid by ratepayers. IPL, MidAmerican, and Muscatine noted that there are factors outside their control, such as changes in environmental regulation, unit dispatch profile based on market conditions, fuel type, fuel quality, and transmission constraints, which may affect any specific goal established for fossil fuel generation efficiency. If the Board decides to establish goals, MidAmerican and IIEG said the goals should be different for existing generation as opposed to proposed new generation. MidAmerican and Muscatine

also said each unit's individual characteristics, such as baseload or peaking, should be considered.

IPL and MidAmerican both emphasized that they currently track the heat rates of individual units and their generation fleets as a whole, and both consider whether cost-effective improvements can be made. While they note that there are available technologies to improve the heat rates of existing units, these must be considered on a unit-by-unit basis to determine whether they are cost-effective for a particular unit. Technologies that improve the heat rate include more efficient turbines, neural network operating systems, improved boiler cleaning equipment, and advances in air heater design. Most commentors said setting efficiency goals over a ten-year period is not practical without a useful benchmark and because there are too many factors outside the control of the generator operator. If goals are established, IPL and MidAmerican said an inventory of all the units would have to be completed.

Consumer Advocate expressed concern that IPL and MidAmerican have not undertaken a comprehensive study to improve fossil fuel generation efficiency. MidAmerican in reply comments said this statement was not accurate because it continuously reviews plant heat rates and weighs the costs and benefits of efficiency improvements. MidAmerican also pointed out that Iowa has its own version of integrated resource planning under Iowa Code § 476.53, which provides that in order to receive advance ratemaking principles for qualified new generation, a utility must have a Board-approved energy efficiency plan in place and demonstrate that the generating facility is reasonable compared to other alternatives.

### III. BOARD DISCUSSION AND CONCLUSION

The Board appreciates the time and effort of participants in this inquiry in responding to the Board's inquiries and offering general comments. Improving the thermal efficiency of existing generating units within the confines of initial unit design is a complex process that, in most instances, requires substantial investments.

Fossil fuel generation efficiency, both for new units and existing units, is encouraged through concepts embedded in the prevailing method of rate regulation of public utilities in Iowa. For example, new units are addressed in Iowa's advanced ratemaking principles statute, Iowa Code § 476.53, and rate recovery is consistently allowed for cost-effective improvements to existing generating units. Perhaps most importantly, there are competitive market pressures that create incentives for utilities to keep plants operating in an efficient, cost-effective manner. It is apparent from their comments that MidAmerican and IPL continuously review and analyze existing generation operations to see where improvements can be made. Flexibility in making improvements is important because of the need to respond to changing market conditions, system conditions, and advancing technology; improvements should not be mandated on a specific time frame.

While supporting the goal of generating efficiency in the broad context of resource management is important, in some instances, this efficiency goal could conflict with other worthwhile goals, such as the addition of environmental controls on generating units. Other goals, such as carbon emissions reduction, may impact the selection of a new resource technology. Also, modifications to increase generator

efficiency may trigger the Environmental Protection Agency's New Source Performance standard under the federal Clean Air Act, potentially resulting in uneconomical capital expenditures.

If PURPA Standard 13 were adopted, the impact would depend on the outcome of a benefit/cost analysis that would determine whether the benefits of an improvement plan (lower operating and capital costs) outweigh the anticipated costs to achieve increased efficiency. Any adoption of PURPA Standard 13 would mean that an analysis would have to be completed to ensure that increasing the efficiency of a utility's fossil fuel generation also leads to an increase in the efficiency of all system operations, including non-fossil fuel generation. Prior to implementing any standard, a benchmark would need to be established and then adjusted based on the type, size, and age of the unit, fuel type, and environmental controls installed. The implementation, monitoring, and evaluation could be burdensome and costly and do not appear to provide significant benefits, particularly given the current market and regulatory forces that already encourage efficient unit operation. Adoption of PURPA Standard 13 would do little or nothing to improve current generation efficiency and it could be difficult and expensive to administer and monitor compliance. The Board will therefore decline to adopt PURPA Standard 13. The Board notes that utility commissions in Minnesota, Wyoming, North Dakota, and South Dakota have all rejected PURPA Standard 13, stating that market forces provide the necessary incentives to achieve efficiency.

The Board makes this determination after opportunity for public comment and consideration and review of all the filed comments. The Board is not precluded, based on future events, from making future changes to generator efficiency policy in other dockets. The Board, from its determinations made in this proceeding, has fulfilled its obligations for consideration of PURPA Standard 13 and will not take further action in this docket. The docket will be closed. The Board concludes that its consideration of PURPA Standard 13 is complete and in compliance with the procedural requirements and deadlines established in EPACT 2005.

#### IV. ORDERING CLAUSES

##### IT IS THEREFORE ORDERED:

1. The Utilities Board declines to adopt PURPA Standard 13 and declares that its consideration of PURPA Standard 13 is complete and in compliance with the procedural requirements and deadlines established in EPACT 2005.
2. Docket No. NOI-07-1 is closed.

##### UTILITIES BOARD

/s/ John R. Norris

/s/ Krista K. Tanner

ATTEST:

/s/ Judi K. Cooper  
Executive Secretary

/s/ Darrell Hanson

Dated at Des Moines, Iowa, this 7<sup>th</sup> day of August, 2008.