

**BEFORE THE
PENNSYLVANIA HOUSE OF REPRESENTATIVES
ENVIRONMENTAL RESOURCES AND ENERGY COMMITTEE**

An Act Providing for the regulation of certain)
reciprocal internal combustion engines)
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)
)

House Bill No. 1699

COMMENTS OF THE INDEPENDENT MARKET MONITOR FOR PJM

Monitoring Analytics, LLC, acting in its capacity as the Independent Market Monitor for PJM (“Market Monitor”), submits these comments on House Bill No. 1699.¹ The proposed bill would set emissions standards for nonemergency generators including those generators used as part of an emergency demand response program. These generators are defined in the bill to be reciprocating internal combustion engines (RICE).

The objective of the bill is fully consistent with the PJM market design and the reliability and efficiency of PJM markets. Allowing additional run time and therefore emissions for such generators would permit such generators to displace conservation-based demand side resources.

Some have asserted that an exemption for RICE generators participating in PJM demand response (“DR”) programs provides benefits to the organized wholesale electricity

¹ PJM Interconnection, L.L.C. is a Regional Transmission Organization (“RTO”), as described in the rules of the Federal Energy Regulatory Commission (FERC). 18 CFR Part 35 Subpart F. PJM operates a centrally dispatched, competitive wholesale electric power market that, as of September 30, 2011, had installed generating capacity of 179,572 megawatts (MW) and more than 750 market buyers, sellers and traders of electricity. PJM operates in a region including more than 58 million people in all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia. The Market Monitor performs the market monitoring function that FERC rules require for RTOs. 18 CFR § 35.34(j)(6). Market Monitoring consists of three core functions: reporting on market performance, monitoring the behavior of market participants and the RTO, and participating in market design. *Id.* The Market Monitor is required to provide independent and objective analysis

markets. Those arguments have no merit. On the contrary, providing an exemption will have negative consequences for efficiency and reliability. Such an exemption would create harmful incentives and aggravate the impact of design flaws in the wholesale electricity markets. Such an exemption conflicts with and would undermine the development of the demand side of these markets.

The assertion that an exemption is required in order to support grid reliability is entirely without support. PJM obtains resources adequate to meet load plus a reserve margin through the RPM auction process. Resource adequacy is the central objective of the PJM capacity market.² Demand side response resources, which are termed “DR” in the capacity market, are offered into the RPM auctions and clear. As a result, DR contributes to reliability, with the caveats associated with Limited DR. But there is no link whatsoever between DR that clears in a forward RPM auction and the need to use diesels without environmental controls or with limited environmental controls to meet those commitments. Existing commitments made in auctions covering Delivery Years through May 31, 2016, have been undertaken with the knowledge of the existing environmental regulations. Clean conservation-based DR provides all the same reliability benefits as diesels without the environmental costs. All DR resources that clear in RPM auctions are termed “Emergency DR.” But that name does not mean that these resources play some unique role in meeting emergencies on the PJM grid. In fact, DR resources in the RPM auctions are economic resources like the generation with which they compete. All PJM capacity resources are needed during emergencies, when demand is high relative to supply. This fact does not demarcate diesel generators as having a special role.

² “RPM” stands for “Reliability Pricing Model.” RPM is a centrally administered “capacity market” through which, in auctions for each Delivery Year (June 1–May 31), PJM obtains resources of all types. These “capacity” resources are all needed to meet demand throughout the year at a MW level determined on the basis of forecast peak demand.

PJM markets have responded quickly and flexibly to other environmental regulations with more far reaching consequences than the proposed environmental rules. PJM's coal fleet is being reshaped currently to be consistent with environmental regulations without permanent exceptions based on reliability needs. The MW of affected coal units are substantially greater than the MW of DR affected by the proposed rules. The PJM markets can respond successfully without any special exemption for RICE.

RICE generator-based DR displaces conservation-based DR in the capacity markets and in the energy markets. RICE generator-based DR also displaces more efficient generation to the extent that Limited DR displaces generation resources. The resources that clear in the capacity market determine the resources that will be available to provide energy on high demand days.

Because DR programs are usually associated with conservation and efficiency, the nature of RICE generators' participation in DR programs can be misunderstood. Customers participating in DR programs based on RICE generators use these behind-the-meter generators to offset the demand at their location during peak hours, so that the metered demand (load) appears to be reduced. Customers do not actually use less power when they rely on these engines, rather, they substitute behind-the-meter diesel engines for the MW they would otherwise need to buy from the wholesale power grid. When customers use energy from diesel engines with no environmental controls, those customers use less efficient and more polluting sources of energy than they would if they purchased from the wholesale power grid.

RICE generators would typically be called to operate as DR by the organized wholesale market during high load hours, generally during hot days.³ Base load units,

³ These are also known as "high energy demand days" or "HEDD." States in the PJM region have raised concerns about the effects of units that operate on these particular days, regardless of annual run time. New Jersey has enacted strict regulations for generators that operate on HEDD.

typically coal and nuclear, operate year round, on and off peak. RICE generators are not competitive with coal when economically dispatched and therefore RICE generators will not displace coal-fired generating units in energy markets. RICE generators may displace other resources that generally operate only during peak hours. Such resources include natural gas-fired combustion turbines and conservation-based DR. These are the resources that would likely be displaced both in the energy market and in the capacity market by an increase in RICE generator-based DR.⁴

The organized power markets include rules that accord preferences to DR over generation resources. The rules do not require, MW for MW, the same level of performance from DR that they do from generation resources even though DR resources receive either the same price as generation resources. One example of these preferences is the Limited DR capacity product included in the PJM market rules. Limited DR is required to respond only up to a maximum of 60 hours per year while generation is required to respond all 8,760 hours of the year if needed (less scheduled maintenance).

The Market Monitor has recommended the elimination of Limited DR from the capacity market because it is an inferior product which distorts capacity prices. PJM has implemented a preferable Annual DR product, and has placed a cap on procurement of the Limited DR capacity product due to PJM concerns about reliability.^{5 6}

⁴ See Northeast States for Coordinated Air Use Management (NESCAUM), "Air Quality, Electricity, and Back-up Stationary Diesel Engines in the Northeast (August 1, 2012).

⁵ *PJM Interconnection, L.L.C.*, 134 FERC ¶61,066 (2011).

⁶ See *Id.* at PP 2-4 ("Under the Reliability Pricing Model (RPM) rules, PJM conducts forward auctions to secure capacity for a future delivery year, thereby allowing both existing and proposed generation, demand response and energy efficiency resources to compete to meet the region's installed capacity needs. PJM provides for demand resources to be offered into the auction in competition with generation and energy efficiency resources.[footnote omitted] These demand resources must reduce load subsequent to a request for load reduction from PJM following the declaration of a Maximum Emergency Generation action, unless the resource has already reduced load pursuant to PJM's economic load response program.[footnote omitted] The level of demand

Allowing an exemption for RICE generators located behind the meter impedes or delays its replacement by cleaner alternatives.^{7,8} Such a preference would have the unintended consequence of providing incentives to displace clean conservation-based DR with uncontrolled diesel generation.

In the capacity market, RICE generators used to support Limited DR displace conservation-based Limited DR. When a generation resource is offered in RPM auctions, there must be a specific, identified generating unit that is offered. That is not true for DR offers in the capacity markets. In the case of DR, the actual resources which will support the offer can be identified just prior to the actual Delivery Year. The result is that a change in incentives like that contemplated by this bill can have a very significant impact on the actual DR resources used to support the Limited DR that has been sold through the 2016/2017 Delivery Year.

The choice of DR technologies should remain an economic choice, one that reflects all of the associated costs and benefits. RICE generators should participate in the wholesale

resources committed to PJM has grown with the implementation of RPM.[footnote omitted] Under the current RPM rules, demand resources can qualify for the RPM provided they: []can be interrupted during the hours of 12:00 p.m. to 8:00 p.m. (Eastern Prevailing Time) on non-Holiday weekdays during the months of June through September; []can be called upon for interruptions up to ten times during that period each year; and []can remain interrupted for up to six hours when called upon. PJM contends that as more megawatts of resources that are only available during narrowly defined peak periods are committed, fewer megawatts of more broadly available resources are committed. As a result, PJM raises a concern that commitment of fewer resources that are more broadly available increases the risk that PJM may have to call on a resource at a time, or in a manner, in which the resource is not required to respond.”); *see also* PJM Resource Adequacy Planning Department, Demand Resource Saturation Analysis at 15 (May 2010) (“Given the current interruption requirements applicable to DR, these study results indicate that the reliability value of DR saturates at an 8.5% penetration level for the RTO.”), which can be accessed at: <<http://www.pjm.com/~media/committees-groups/committees/pc/20100811/20100811-item-10-demand-response-saturation-report.ashx>>.

⁷ See *2011 State of the Market Report for PJM* at 158.

⁸ Monitoring Analytics, LLC, can be found on the web at <<http://www.monitoringanalytics.com>>.

power markets based on their full costs without attributing any special status to them when they are used to support participation in DR programs.

The assertion that the exemption is required in order to support grid reliability is entirely without support. PJM obtains resources adequate to meet load plus a reserve margin through the RPM auction process. DR is offered into the auctions and clears. As a result, DR contributes to reliability, with the caveats associated with Limited DR. But there is no necessary link whatsoever between DR that clears in a forward RPM auction and the need to use diesels without environmental controls to meet those commitments. Clean conservation-based DR provides all the same reliability benefits without the environmental costs.

Run time exemptions for RICE are not required by any aspect of competitive wholesale electricity markets. Such exemptions would result in the displacement of conservation-based demand side resources and negatively affect wholesale power markets, in exchange for weakened emissions limits.

Thank you for considering our comments on this matter.

Respectfully submitted,



Jeffrey W. Mayes

Joseph E. Bowring
Independent Market Monitor for PJM
President
Monitoring Analytics, LLC
2621 Van Buren Avenue, Suite 160
Valley Forge Corporate Center
Eagleville, Pennsylvania 19403
(610) 271-8051
joseph.bowring@monitoringanalytics.com

General Counsel
Monitoring Analytics, LLC
2621 Van Buren Avenue, Suite 160
Valley Forge Corporate Center
Eagleville, Pennsylvania 19403
(610) 271-8053
jeffrey.mayes@monitoringanalytics.com

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