

**BEFORE THE
COUNCIL OF THE DISTRICT OF COLUMBIA
COMMITTEE ON TRANSPORTATION AND THE ENVIRONMENT**

B20-569, the Air Pollution Disclosure and
Reduction Act of 2013

)
)
)
)

STATEMENT OF THE INDEPENDENT MARKET MONITOR FOR PJM

Monitoring Analytics, LLC, acting in its capacity as the Independent Market Monitor for PJM (“Market Monitor”), submits this statement on Bill 20-569, following the testimony of Dr. Joseph E. Bowring in the above referenced matter at the joint public hearing convened January 2, 2014.¹ Bill 20-569, the Air Pollution Disclosure and Reduction Act of 2013, would require disclosure of and emissions standards for the operation of demand response generating sources in the District. These generators are defined in the bill to be internal combustion engines, which the Market Monitor refers to as “RICE,” consistent with the U.S. Environmental Protection Agency’s (“EPA”) use of this term for reciprocating internal combustion engines.

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

Section 103(a) of Bill 20-569 bans the construction and operation of an internal combustion engine as a demand resource “unless the source implements, at a minimum, lowest achievable emission rate technology.” At Section 103(b), the bill further bans use of “emergency or back-up generators” as demand response generating sources. EPA has relaxed the limits on run times permitted to RICE that do not meet EPA’s emissions standards in order to enable participation by such RICE in the PJM Emergency Load Response Program as Limited DR.² EPA did so in response to assertions that RICE are needed for reliability. RICE are not needed for reliability. Allowing an exemption for RICE also undermines market efficiency. The EPA exemption increases Limited Demand Resources (“DR”), which undermines the efficient operation of the RPM, PJM’s capacity market.³ EPA has relaxed the environmental rules that it has determined are needed to protect the environment in order to accommodate an exemption that permits RICE to negatively impact reliability and economics in PJM, and, therefore, in the District of Columbia. Enactment of Bill 20-569 would prohibit jurisdictional RICE from participating in the PJM Emergency Demand Response Program that otherwise could have participated based on the EPA exemption.⁴

If the Council of the District of Columbia wants to meet or exceed EPA air quality protection standards, there is no reliability or economic reason not to do so. The objective of

² See *National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines; New Source Performance Standards for Stationary Internal Combustion Engines*, Final Rule, EPA Docket No. EPA-HQ-OAR-2008-0708, 78 Fed. Reg. 6674 (January 30, 2013).

³ “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.

⁴ The only RICE that would not be affected are RICE that do meet EPA’s emission limits but do not meet the Bill 20-569’s lowest achievable emission rate technology standards. We are not aware and would not expect that any such RICE exist.

the bill is fully consistent with the PJM market design and the reliability and efficiency of PJM markets. Enactment of Bill 20-569 would, in fact, improve the reliability and efficiency of PJM 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. 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 to the extent that it is comparable to generation that it displaces from clearing. But there is no link whatsoever between DR that clears in a forward RPM auction and the need to use RICE, typically 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.

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-based DR displaces conservation-based DR in the capacity markets and in the energy markets. RICE-based DR also displaces more efficient generation to the extent that Limited DR including RICE 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 participation by RICE in DR programs can be misunderstood. Customers participating in DR programs based on RICE 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 would typically be called to operate as DR by the organized wholesale market during high load hours, generally during hot days.⁵ Base load units, typically coal and nuclear, operate year round, on and off peak. RICE are not competitive with coal when economically dispatched and therefore RICE will not displace coal-fired generating units in energy markets. RICE may displace other resources that generally operate only during peak hours. Such resources include natural gas-fired combustion turbines and conservation-

⁵ 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.

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.⁶

The PJM 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 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.^{7 8}

⁶ See Northeast States for Coordinated Air Use Management (NESCAUM), “Air Quality, Electricity, and Back-up Stationary Diesel Engines in the Northeast (August 1, 2012).

⁷ *PJM Interconnection, L.L.C.*, 134 FERC ¶61,066 (2011).

⁸ 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 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

The EPA exemption that Bill 20-569 would reverse is designed to permit RICE to participate as Limited DR, and only as Limited DR, in RPM. Limited DR is an inferior form of capacity that displaces generation capacity and other types of DR that are more comparable to generation capacity. Limited DR is based on the false premise that capacity is an emergency product when, in fact, capacity is needed year round.

Section 103(b) of Bill 20-569, which bans use of “emergency or back-up generators” as demand response generating sources, is a useful provision because it prevents such generators from serving as Limited DR. It is appropriate to prevent generators that cannot individually provide capacity from individually selling capacity into PJM markets as Limited DR.

Allowing an exemption for RICE located behind the meter so that it can offer Limited DR into RPM impedes or delays its replacement by cleaner alternatives.^{9 10} Such a preference would have the unintended consequence of providing incentives to displace clean conservation-based DR with diesel generation.

In the capacity market, RICE used to support Limited DR may 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. Similar rules for ensuring physical DR are not enforced in PJM. In the case of DR, the actual resources which will support the offer may be identified just prior to the actual Delivery Year. The result is that a

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>.

⁹ See the 2011 *State of the Market Report for PJM* at 158.

¹⁰ Monitoring Analytics, LLC, can be found on the web at <http://www.monitoringanalytics.com>.

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 power markets based on their full costs, including environmental compliance 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 to meet those commitments. Clean conservation-based DR provides all the same reliability benefits without the environmental costs.

RICE resources are not required by any aspect of competitive wholesale electricity markets.

Thank you for considering our testimony and this statement 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

Dated: January 16, 2014