

THE PENNSYLVANIA



ELECTRIC POWER GENERATION ASSOCIATION



EPGA is a regionally-focused, Pennsylvania-based trade association of electric generating companies.



Pennsylvania: The Keystone State of Electric Generation



Coal



Nuclear



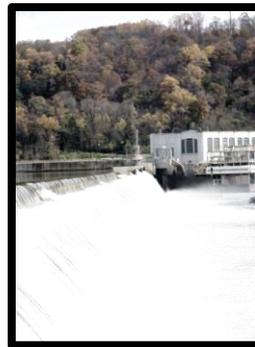
Gas



Wind



Solar



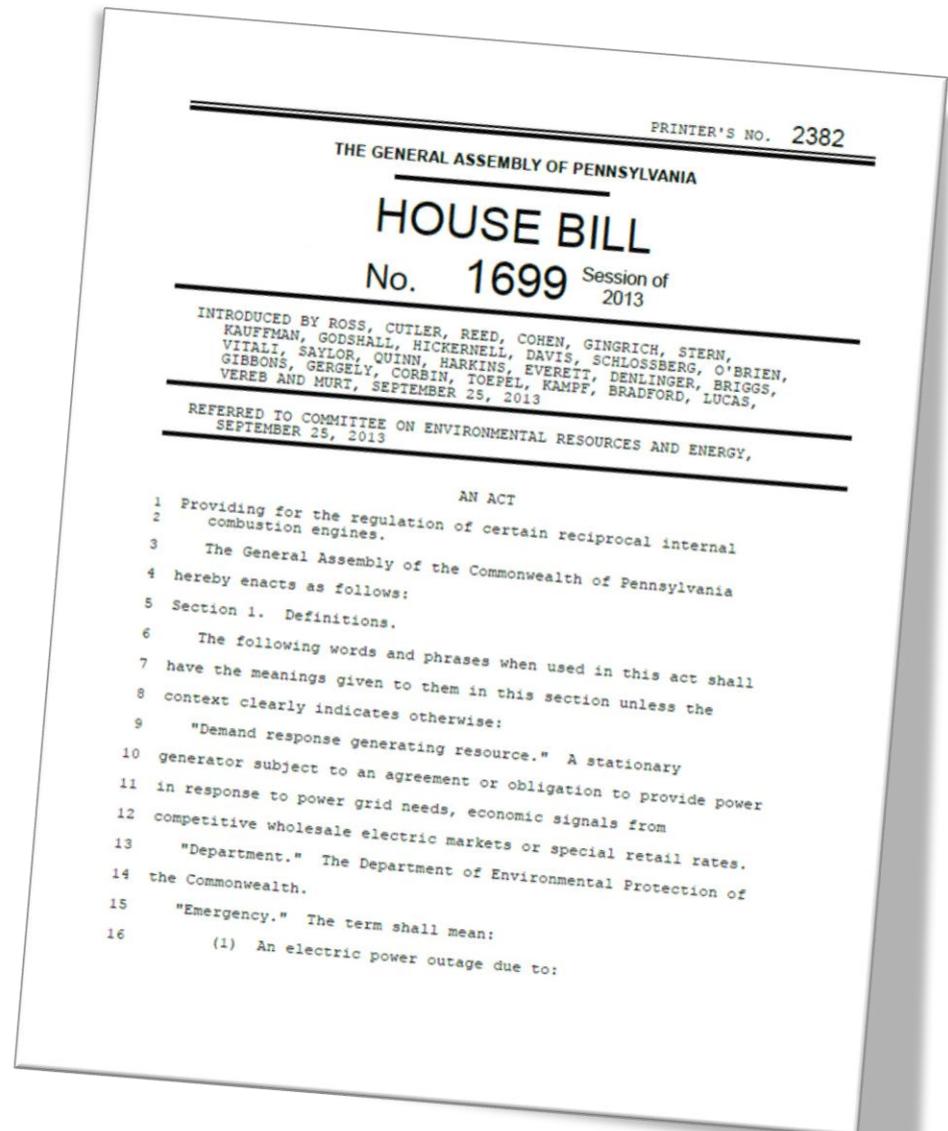
Hydro



Pumped Storage Hydro

EPGA Supports House Bill 1699

- Competitive electric markets require level playing field – fairness matters
- All subsidies, including pollution subsidies, distort market
 - ✓ Displacement of cleaner, higher capacity resources
- Pollution exemption not necessary for economic gain
- Uncontrolled standby “emergency” generators not needed for reliable operation of bulk power system
- Negative environmental impacts
- Negative public health impacts
- Emergency generators used for true emergencies (not running for profit) should be exempt



Brief History of RICE NESHAPS

6674 Federal Register / Vol. 7

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 60 and 63

[EPA-HQ-OAR-2008-0708, FRL-9756-4]

RIN 2060-AQ58

National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines; New Source Performance Standards for Stationary Internal Combustion Engines

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The EPA is finalizing amendments to the national emission standards for hazardous air pollutants for stationary reciprocating internal combustion engines. The final

- EPA originally sought to limit uncontrolled use to 15 hours per year
- Agency was sued by DR providers and proposed legal settlement to give 100 hour year pollution exemption
- Generators, environmental and public health groups, environmental regulators, many others argued against settlement:
 - ✓ PA Department of Environmental Protection
 - ✓ Pa Public Utility Commission
- Notwithstanding opposition, EPA adopted 100 hour pollution exemption
- Some parts of Final Rule being reconsidered, some have filed suit in Federal Court to block rule

PA Not Alone - States Now Taking Action



MARYLAND DEPARTMENT OF THE ENVIRONMENT

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Martin O'Malley
Governor

Robert M. Summers, Ph.D.
Secretary

Anthony G. Brown
Lieutenant Governor

December 20, 2012

To whom it may concern,

Over the past two decades, air quality in Maryland has improved substantially. These improvements resulted from strict controls on existing air pollution sources, such as power plants, vehicles and small businesses. Though Maryland's overall air quality continues to improve, ozone levels in Maryland are still above federal standards. Therefore, the Department is challenged to identify, evaluate and if appropriate, implement additional emission control programs to continue improvements in Maryland's air quality. On April 30, 2012, Maryland was designated as the only state east of the Mississippi with a Moderate nonattainment classification/designation for 8-hour ozone National Ambient Air Quality Standard.

In an effort to support implementation of renewable and energy efficient practices, the Department continues to research distributed generation and demand response programs. Clean distributed generation technologies increase electricity available to the electric system grid and maintain reliability. They may also add benefits including, but not limited to, reduced congestion, improved management of system peak demands through demand response, and added capacity that mitigates the need for additional central generating capacity in the region. Meeting electrical energy needs in a manner that is optimally cost-effective and reliable does not preclude meeting them in an environmentally responsible manner.

The Department has identified the operation of backup generators, due to demand response call-outs, as possibly contributing to poor air quality in areas such as Baltimore. The role of back up generators at industrial, commercial and institutional facilities for peak shaving and demand response is under review, especially since the operation of these backup generators is most likely to occur on hazy, hot summer days when ozone levels throughout Maryland can be extremely elevated. Federal RICE rule amendments¹ have been proposed that will allow uncontrolled back up generators to operate for many hours with unknown consequences to air quality and health impacts².

¹ As published on June 7, 2012 in the Federal Register, entitled "National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines; New Source Performance Standards for Stationary Internal Combustion Engines (77 FR 33812-33857)

² MDE agrees with statements by NACAA on August 9, 2012 to EPA docket No. EPA-HQ-OAR-2008-0708



New Jersey
Department of
Environmental
Protection

COMPLIANCE ADVISORY

ENFORCEMENT ALERT

Making You Aware of Incentives and Compliance Assistance Opportunities

Compliance & Enforcement

Issued: April 8, 2013

#2013-05

Emergency Generators Participating in Demand Response and Peak Shaving Programs Require Air Permit Revision and Air Pollution Control

Who is affected by this advisory?

Any facility in New Jersey that owns or operates a stationary internal combustion engine that generates electricity permitted as an emergency generator under Air General Permit (GP) 005, Air Preconstruction Permit, or Title V Operating Permit.

Why is DEP issuing this advisory?

The Department has discovered that some facility owners and operators of emergency generators are entering into electric supply agreements for peak (load) shaving, demand response and like programs. **Operating emergency generators for peak shaving or demand response is permissible only if the approved air permit contains conditions specifying allowable non-emergency use and includes air pollution control.**

Stationary internal combustion engines used as emergency generators may be operated without air

Emergency Electrical Generator Permit By-Rule Compliance Advisory

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Emergency Electrical Generator Permit-By-Rule Compliance Advisory

Answer ID: 2501 | This answer was first published on: 05/16/2013 08:14 AM | This answer was last updated on: 05/16/2013 08:17 AM

Compliance Advisory Notice
May 2012

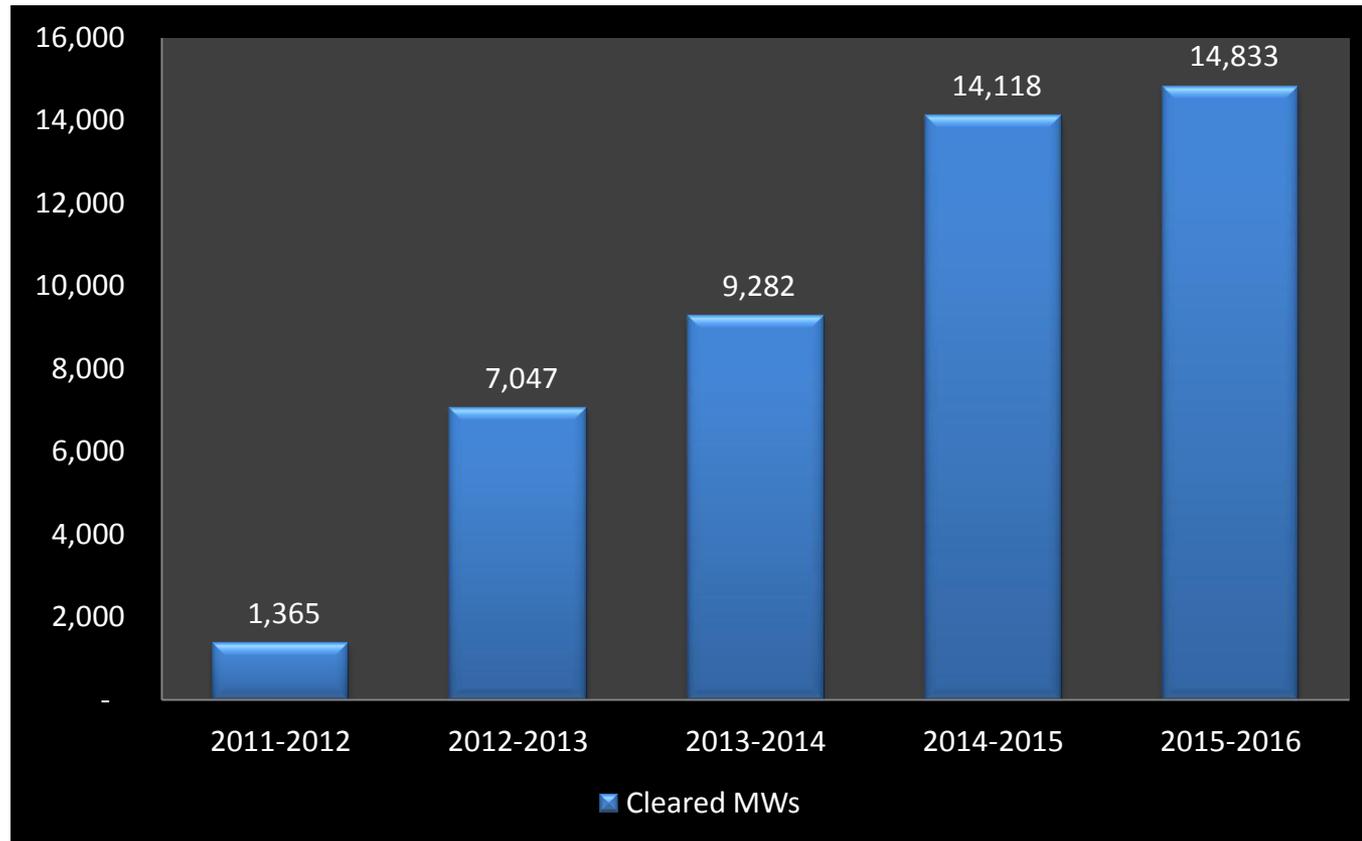
Who is affected?

The purpose of this notice is to inform owners and operators of emergency electrical generators covering under the Ohio Environmental Protection Agency (Ohio EPA) permit-by-rule that the use of those permit-by-rule for peak shaving or other non-emergency demand response is limited to specific stations and conditions. You should be aware of these conditions prior to making any commitment to supply power for non-emergency utilization, such as peak shaving. Owners or operators of emergency electrical generators permitted under Ohio EPA's permit-by-rule may use such generators for non-emergency demand response only to the limited extent allowed by the United States Environmental Protection Agency (EPA) rule on Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (RICE/NEHAPP) until May 8, 2014. Ohio law generally prohibits peak shaving by emergency generators, and the limited exception to that law provided by the U.S. EPA's RICE/NEHAPP is in direct conflict with Ohio's standards for emergency electrical generators that are not permitted under Ohio EPA permit-by-rule may HCT. Use such generators for non-emergency demand response unless specifically authorized by an Ohio EPA permit term.

Owners or operators of emergency electrical generators that utilize reciprocating internal combustion engines (RICE) that are not permitted to apply for and obtain installation and operating permits under Ohio Administrative Code (OAC) Chapter 37, Some owners or operators have chosen to apply for and obtain permit approval under Ohio EPA's permit-by-rule (PBR) for emergency electrical generators (Emergency Generator PBR), which is found at OAC Rule 3745-21-30(A)(3)(B).

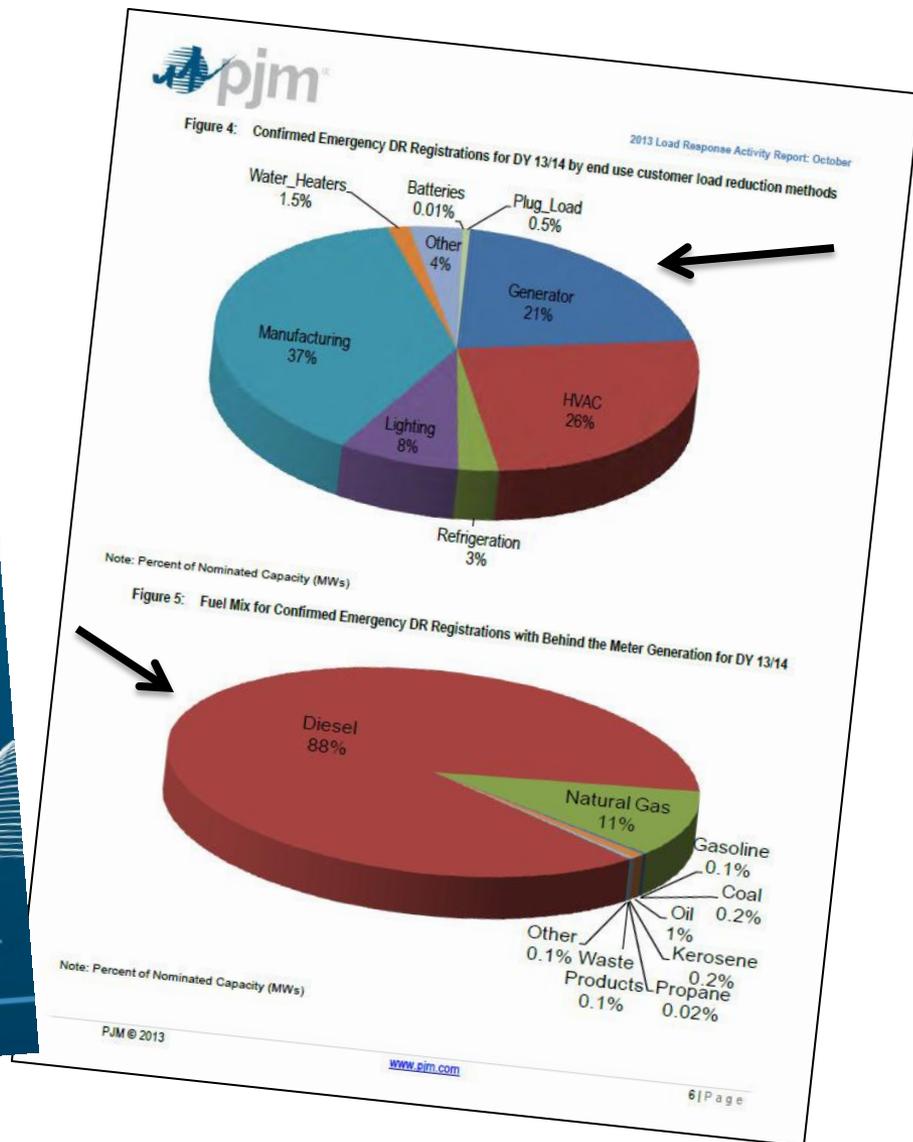
Effective August 30, 2010, Ohio EPA modified OAC 3745-21-30 by adding several provisions for terms in Ohio EPA's Emergency Generator PBR. Ohio EPA's use of the Emergency Generator PBR is the definition of "Emergency Internal Combustion Engines" A portion of this definition states: "The engine used for non-emergency use (for instance for peak shaving) or used in a non-emergency energy assistance program) is not an emergency internal combustion engine under the definition of OAC 3745-21-30(A)(3)(B)(a)(ii). The exception in OAC 3745-21-30(A)(3)(B)(a)(ii) is not applicable to the definition of OAC 3745-21-30(A)(3)(B)(a)(ii)."

DR Has Dominated Wholesale Power Markets in Recent Years



Delivery Year	New Generation	Generation Upgrades	Imports	Demand Response	Energy Efficiency
2016/2017	4,282 (16%)	1,181 (4.5%)	7,483 (28%)	12,408 (47%)	1,117 (4.2%)

Some DR Not Curtailing Use – Shifting Use



DR Marketers Targeting Owners of Backup Generators

ENERNOC | DemandSMART Product Overview

Generate New Payments for Your Business

Through EnerNOC and Demand Response

If your business has a generator set, you may qualify for a simple and lucrative opportunity to be paid to run your generator. Demand response programs pay businesses to switch to on-site generation when the electrical grid experiences spikes in demand and supply, typically for just a few hours per year. Demand response participants earn substantial payments, increase the reliability of the electrical grid, and get advanced notice of irregular conditions on the grid.

By enrolling in demand response with EnerNOC, you will join the world's largest "virtual power plant," a network of more than 10,000 energy users worldwide. You will also enjoy a range of benefits.

EMERGENCY PREPAREDNESS
What would you do if you knew there would be a blackout in two hours? Demand response participation gives you advance notice of any irregular conditions on the grid and helps ensure your readiness for a true grid emergency. By testing your generators regularly and under load, your business will be confident that your backup system will perform during a real emergency.



On-site generators can earn your business regular payments through demand response.

FINANCIAL REWARDS FROM DAY ONE
Unlike capital-intensive energy management programs that don't deliver results until years later, demand response starts creating a bottom-line impact immediately. Our demand response customers have earned millions of dollars of payments – revenue they've reinvested into their operations to maintain equipment and pursue important upgrades of transfer switches and other equipment. Participating in demand response will deliver dependable, regular payments that you can count on.

EASY ENABLEMENT
EnerNOC's engineers work directly with your facilities and engineering staff to determine your eligibility for a variety of

“We realized that we were already testing our generators anyway, so it made sense to put them to work during brief emergency periods.”

Joe LaRoche, Director of Facilities Management, Berkshire Health Systems

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“Generate New Payments for Your Business”

“...you may qualify for a simple and lucrative opportunity to be paid to run your generator.”

“...join the world's largest 'virtual power plant...”

“Our demand response customers have earned millions of dollars of payments...”

Source: www.enernoc.com

DR Participants Paid a Premium for Curtailment

- All demand response is an economic activity
- Backup “emergency” generators are being repurposed as for-profit machines

- 2008 = \$140 Million
- 2009 = \$300 Million
- 2010 = \$510 Million
- 2011 = \$482 Million
- 2012 = \$332 Million

Figure 23: Emergency Demand Response Monthly Capacity Revenue from RPM (2013)

Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
AECO	\$411,097	\$371,313	\$411,097	\$397,836	\$411,097	\$1,002,307	\$1,035,717	\$1,035,717	\$1,002,307
AEP	\$425,101	\$383,962	\$425,101	\$411,388	\$425,101	\$749,663	\$774,652	\$774,652	\$749,663
APS	\$185,478	\$167,528	\$185,478	\$179,495	\$185,478	\$477,348	\$493,260	\$493,260	\$477,348
ATSI	\$19,859	\$17,937	\$19,859	\$19,218	\$19,859	\$365,564	\$377,750	\$377,750	\$365,564
BGE	\$5,430,108	\$4,904,613	\$5,430,108	\$5,254,943	\$5,430,108	\$7,487,232	\$7,736,807	\$7,736,807	\$7,487,232
COMED	\$405,926	\$366,643	\$405,926	\$392,831	\$405,926	\$782,114	\$808,185	\$808,185	\$782,114
DAY	\$63,670	\$57,508	\$63,670	\$61,616	\$63,670	\$42,849	\$44,278	\$44,278	\$42,849
DEOK	\$8,185	\$7,393	\$8,185	\$7,921	\$8,185	\$16,115	\$16,653	\$16,653	\$16,115
DOM	\$306,929	\$277,226	\$306,929	\$297,028	\$306,929	\$585,863	\$605,391	\$605,391	\$585,863
DPL	\$1,547,049	\$1,397,335	\$1,547,049	\$1,497,145	\$1,547,049	\$1,915,174	\$1,979,013	\$1,979,013	\$1,915,174
DUQ	\$49,718	\$44,907	\$49,718	\$48,114	\$49,718	\$143,269	\$148,045	\$148,045	\$143,269
EKPC						\$1,495	\$1,544	\$1,544	\$1,495
JCPL	\$1,495,628	\$1,350,890	\$1,495,628	\$1,447,382	\$1,495,628	\$2,215,048	\$2,288,883	\$2,288,883	\$2,215,048
METED	\$1,044,281	\$943,222	\$1,044,281	\$1,010,595	\$1,044,281	\$2,174,111	\$2,246,581	\$2,246,581	\$2,174,111
PECO	\$2,660,069	\$2,402,643	\$2,660,069	\$2,574,260	\$2,660,069	\$5,142,792	\$5,314,219	\$5,314,219	\$5,142,792
PENELEC	\$1,144,857	\$1,034,064	\$1,144,857	\$1,107,926	\$1,144,857	\$2,884,571	\$2,980,723	\$2,980,723	\$2,884,571
PEPCO	\$1,906,591	\$1,722,082	\$1,906,591	\$1,845,088	\$1,906,591	\$4,092,964	\$4,229,396	\$4,229,396	\$4,092,964
PPL	\$3,247,272	\$2,933,020	\$3,247,272	\$3,142,521	\$3,247,272	\$7,019,745	\$7,253,736	\$7,253,736	\$7,019,745
PSEG	\$2,354,400	\$2,126,555	\$2,354,400	\$2,278,452	\$2,354,400	\$8,574,172	\$8,859,978	\$8,859,978	\$8,574,172
RECO	\$14,896	\$13,454	\$14,896	\$14,415	\$14,896	\$249,408	\$257,721	\$257,721	\$249,408
Total	\$22,721,111	\$20,522,294	\$22,721,111	\$21,988,172	\$22,721,111	\$45,921,805	\$47,452,531	\$47,452,531	\$45,921,805
Total Capacity Credits:					\$297,422,472				

Note: Only indicates capacity revenue – does not include revenues from energy or ancillary services markets

Market Impact of Uncontrolled For-Profit Backup Generators

- Displaces cleaner, more reliable generation
- As system loses other capacity, it becomes more reliant on these resources
- Distorts market signals that are necessary for regulated incumbent generators and well-controlled prospective generators
- Is not necessary because competitive markets can procure resources necessary to meet demand (clean DR, etc.)

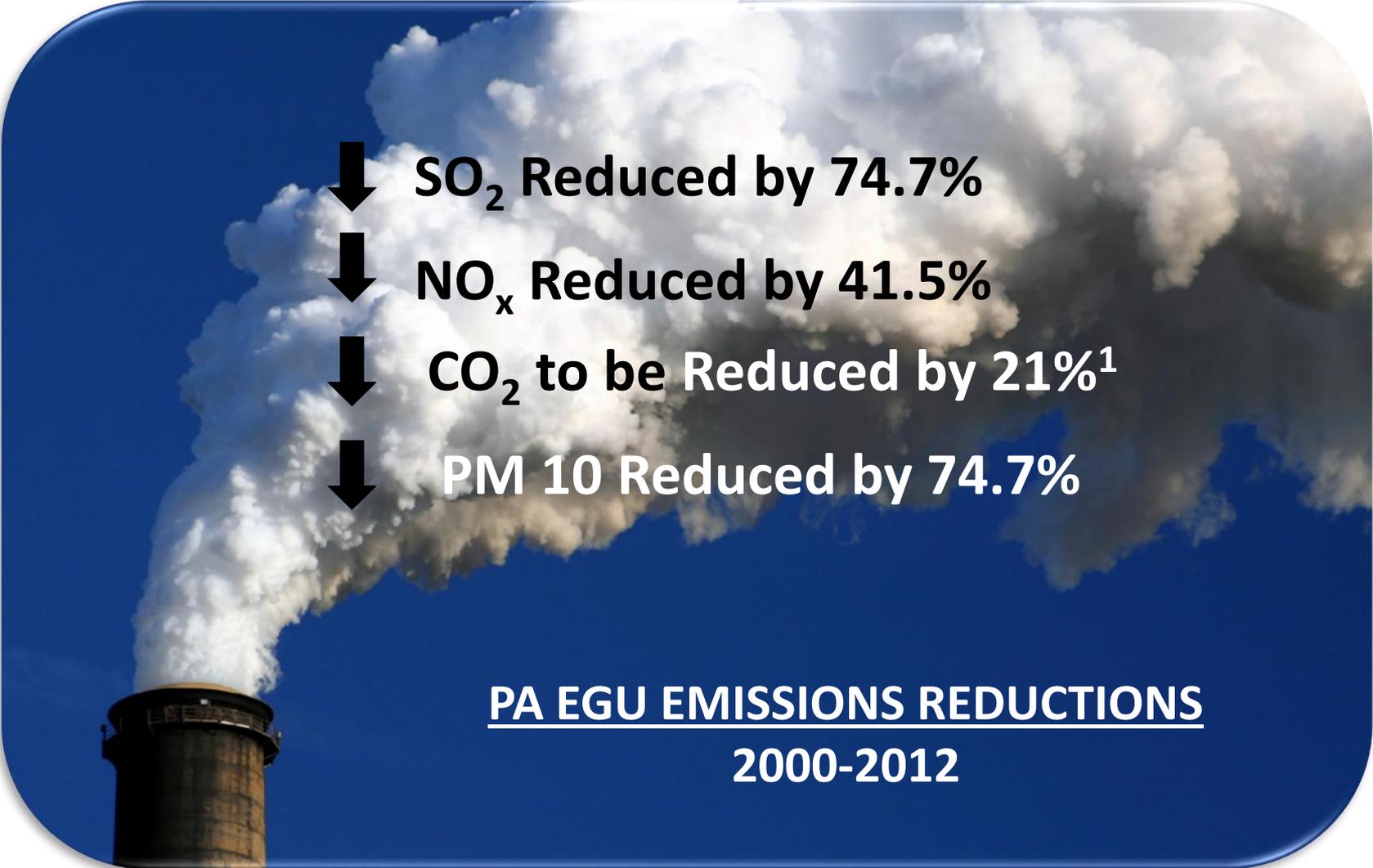


Negative Environmental Impacts

- Much higher emission rates
- Dispatched on worst air quality days of year
- Tend to be congregated in non-attainment areas of the state
- Will be dispatched more often and for longer periods of time, exacerbating issues
- Other point-source permitted users will be required to “do more” to account for increase in emissions from these units



PA Electric Generators Are Doing Their Part

- 
- ↓ **SO₂ Reduced by 74.7%**
 - ↓ **NO_x Reduced by 41.5%**
 - ↓ **CO₂ to be Reduced by 21%¹**
 - ↓ **PM 10 Reduced by 74.7%**

PA EGU EMISSIONS REDUCTIONS 2000-2012

¹Includes actual and projected emission reductions estimated by PA DEP from 2007 levels through 2016

Important Questions for Policy Makers

- **Should for-profit generators be exempted from pollution controls?**
- **Who will pay for the emissions that are produced from the exempted for-profit generators?**
- **What will be the environmental result as these generators run more often and for longer periods of time?**
- **How can higher capacity, cleaner resources fairly compete – will they be forced out of the market?**
- **Should centralized stationary generation sources be made to do more in terms of emission controls while other for-profit generators do nothing?**





Thank you

The Electric Power Generation Association

Real World Example Market and Environmental Impact of Dirty Demand Response

Every megawatt of DR that clears the PJM-administered capacity auction displaces a megawatt of other capacity that otherwise would clear the market. This means that any DR resource that participates in a formal capacity market is essentially an economic activity (not an “emergency” activity) because it is competing with non-DR resources for the opportunity to earn market-based revenues.

Market Impacts – Displacement of Cleaner, More Reliable Resources

- Delaware DNREC describes a situation in which a DR provider has aggregated 225 emergency backup generators located at Delaware poultry farms. Each unit is approximately 300 kilowatts in size. In the context of the PJM capacity auction, therefore, this asset (“Poultry Farms”) is a 67.5 megawatt capacity resource.
- Poultry Farms is likely to clear the auction because of its low cost: it is existing installed infrastructure; it requires little if any capital investment; and it experiences very small incremental O&M costs, which are more than adequately covered through the capacity payments received. (Note that not all DR is low cost; some percentage of clean DR that bids into the auction has historically failed to clear because it is higher cost.)
- By clearing the auction, Poultry Farms displaces 67.5 MW of capacity that otherwise would have cleared. This is because the auction will continue to clear resources until PJM acquires the specific amount of capacity it needs to ensure reliability, irrespective of whether or not Poultry Farms decides to bid.
- With few exceptions, the PJM capacity auction does not differentiate between baseload, intermediate, peaking, or DR capacity and does not differentiate between fuel type or technology. A megawatt of capacity is a megawatt of capacity.
- The result is that 67.5 MW of some other capacity resource failed to clear the auction because it was unable to compete against Poultry Farms. The capacity that failed to clear could be existing capacity, proposed new capacity, or some combination thereof (including generation, other demand response resources, or energy efficiency).
- One of the primary reasons other resources were unable to compete with Poultry Farms is because Poultry Farm’s diesel standby generators units are not required to incur the cost of emissions controls due to the EPA-endorsed pollution exemption.

This is just one small example of the current trend. The problem is compounded by the scope of the PJM capacity market and the growing penetration of DR and uncontrolled re-purposed standby generators.

The Broader Environmental Consequences

Waiving environmental compliance requirements for diesel DR that compete for the right to earn capacity and energy revenues represents a financial subsidy. This discriminates against other power producers that remain subject to emissions limitations and inhibits investment in new and existing cleaner generating capacity (and other types of DR resources).

The overall environmental impact of diesel DR results from the manner in which the various types of resources that clear the *capacity* market subsequently operate in PJM's *energy* market. Energy and capacity participate in separate, but highly interrelated markets. PJM administers its energy market by utilizing its capacity resources to meet real-time energy demand using an economic dispatch model.

A capacity resource needs to be available to run when called upon, but some capacity resources may be called upon infrequently or not at all. Nonetheless, all capacity resources generally receive the same level of capacity compensation (subject to locational/zonal variations). PJM compensates capacity on the basis of dollars per megawatt-day and compensates actual energy production on the basis of dollars per megawatt-hour.

Poultry Farms is, in effect, a 67.5 MW peaking resource that does not participate in the PJM day-ahead energy market. PJM will call upon Poultry Farms to operate only during unusually stressful conditions on the grid. However, when and if Poultry Farms is dispatched in response to real-time grid conditions, it will not displace other resources because under those conditions PJM is running everything it possibly can.

According to PJM, due to recent retirements of other resources from the grid, DR resources, including uncontrolled diesel units, will be dispatched more frequently and for greater periods of time. Based on simulation results, the projected frequency of calls in each of the next three delivery years is:

- 2013/14: between 1 and 5 calls
- 2014/15: between 5 and 9 calls
- 2015/16: between 5 and 9 calls

Therefore, while the Poultry Farm will run less frequently than traditional (environmentally regulated) resources, PJM's reliance on it is increasing and the fact that it participates as a *subsidized* capacity resource results in a lost opportunity to reduce regional air emissions.