Item #5
MWACQ-TAC
October 8, 2013

COMAR 26.11.36 Distributed Generation Conceptual Amendments

June 2013

Background

PJM electricity markets

- Research shows increased likelihood that emergency generators will be operating.
- Emergency Backup Generators can be very old and lack current technologies for emission controls.

2009 Maryland Distributed Generation regulation was a good start, recognized emerging markets and allowed flexibility.

- We now have conclusive numbers that show more than 9 tons of NOx can be emitted in one event/day in Maryland.

Concerns

- The electricity markets deploy all eligible supply-side and demand-side resources without consideration of respective environmental performance.
- Demand Response (DR) programs provide financial incentives for the use of uncontrolled backup generators on the hottest summer days, when conditions would be most conducive to the formation of ground-level ozone.
- Most stationary generators are fired with diesel fuel and are uncontrolled.
- The combustion of diesel fuel releases significantly more NOx emissions per unit of power compared to the generation of electricity from well-controlled power plants.

Proposed MD DG Regulations

- Revise definition of "Emergency Generator" to exclude all DR programs
  - A "Load shaving unit" is a generator that operates for other than emergency
  - New – all PJM Economic AND Emergency DR is load shaving
  - "Peak Shaving" is running a generator to offset a utility bill demand charge, under PJM program or not. Peak shaving is load shaving
- PJM Emergency DR generators will have emission restrictions for NOx

Proposed MD DG Amendments

COMAR 26.11.02

- Permit required for engines 500 hp or above. And ADD all load shaving engines, 100 hp and above.

COMAR 26.11.36

- All DR programs are load shaving and need non-emergency permit. {Emergency DR = load shaving}
- NOx rate 1.4 g/bhp-hr for existing load shaving (prior to 2015)
- NOx rate 0.5 g/bhp-hr for new load shaving (after 2015)
- Delete 10 hour allowance for storm avoidance or other non-emergency hours.
- Delete purchase of NOx allowances to offset emissions in 2015.

How to comply

- To meet strict NOx emission rates, NOx controls will likely need to be installed. Manufacturer Guarantee.
- Install new Tier 4 generator. EPA Certified.
- Permits will need to be obtained or revised.
  - MDE will require all generators in any DR Program or performing Peak Shaving to obtain a Permit to Contruct (PTC)
  - Load shaving units are permitted with 8760 hours
  - Multiple engines and other equipment on site can trigger Permit to Operate (PTO).

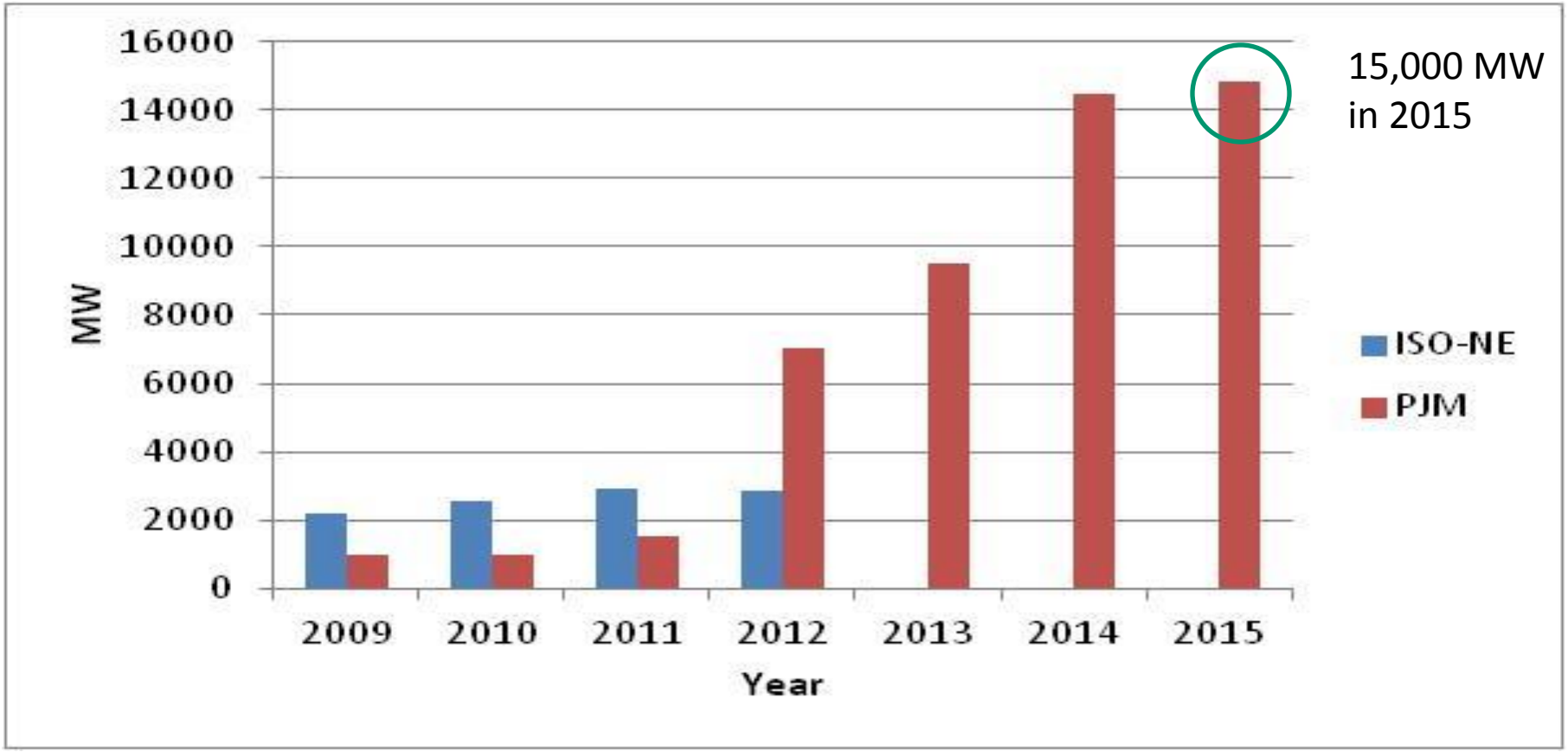
Alternative, don't run generator for DR event,
instead reduce KW usage only,
and still get paid.

Reasons for Proposed Amendments

Why more strict now?

- Tighter federal ozone standard and Maryland 2008 Ozone Status
- Need for local NOx controls
- PJM DR expansion in the market may preclude cleaner generation
- Maryland CSP reports confirm generators are running
- To adopt the OTC Model Rule standards

Demand resources growing in New England and PJM



Data from ISO New England and PJM website

PJM Future

- PJM Market Analyst predicts number of Emergency DR events will increase from 1-4 per year to 5-9 per year based on market growth.
- PJM is evolving programs to ensure reliability.
- Complexity in the market and possible future programs with unlimited hours of availability have provoked the Department to review regulations.

OTC Model Rule 2011

– Emergency generators are part of Demand Response Program and would be considered non-emergency and would require emission limit for NOx, HC, CO and PM.

- Emergency generators can only run in “true emergency”, maintenance and testing. No other non-emergency run time.
- Emergency definition contains reference to 5% voltage or transmission deviation as an emergency.

Other States

- DE & NJ – Generators in any DR program need to permit as non-emergency with required emission limits
- MA, NH & VA - Generators registered as emergency can be in “Emergency DR” only – equivalent of NERC EEA Level 2

Questions