# Maryland's Competitive Electricity Markets: Where We've Been and Where We're Going


Commissioner Anne E. Hoskins
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# Where Exactly is Maryland?

# Agency Overview

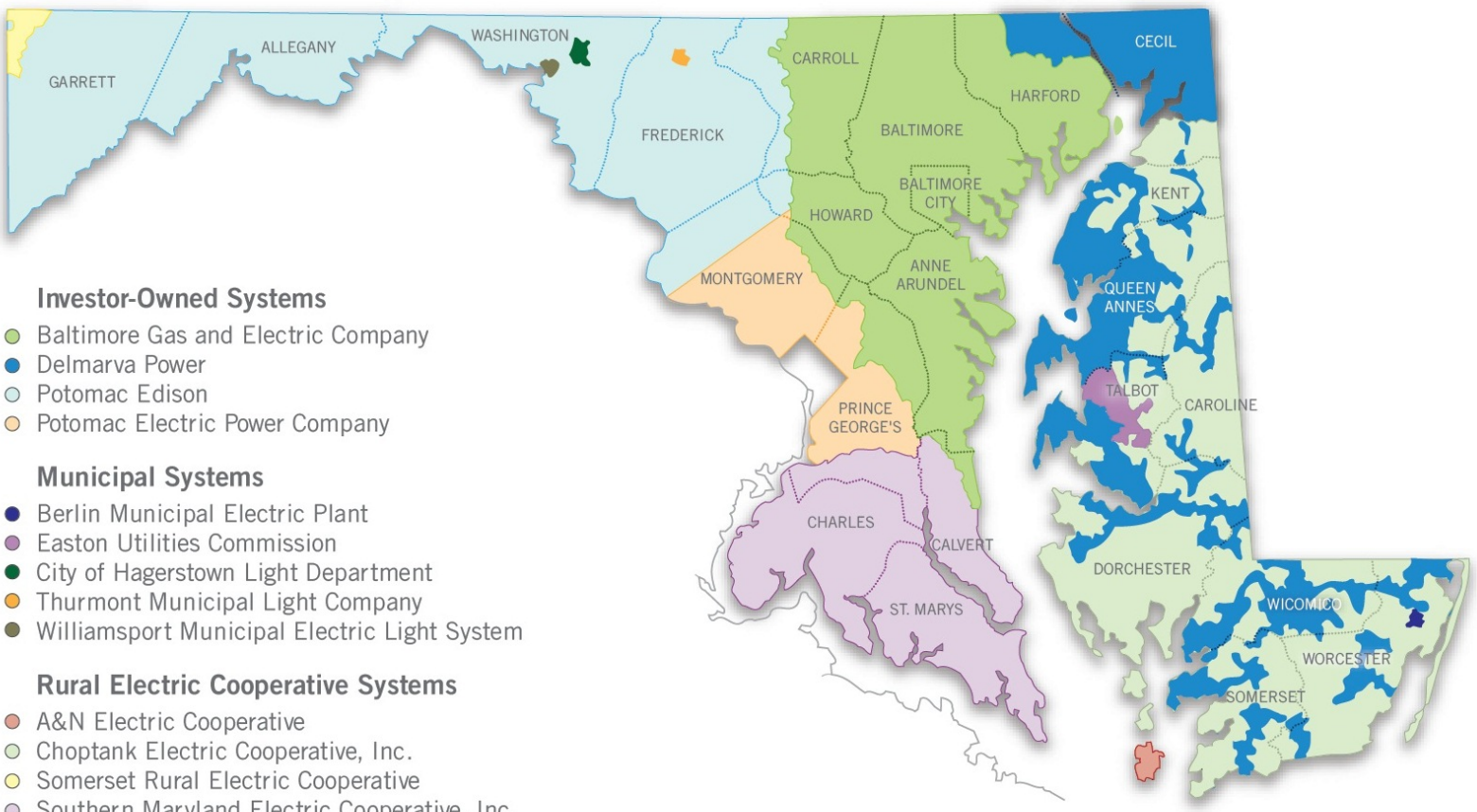
- Established in 1910 as an independent state agency with five appointed commissioners
- Regulates companies to ensure that public services are safe, economical, and reliable:
  - Electric and gas utilities
  - Competitive electric and gas suppliers
  - Telecommunications (landline phones)
  - Passenger Transportation
  - Certain water and sewer companies
  - Hazardous liquid pipelines

# Maryland's Electric Industry: An Overview

- Separated into generation & supply, transmission & distribution
- Generation & supply: not regulated; prices set by competitive wholesale and retail markets
- Distribution: regulated monopoly function of utilities; price and quality-of-service regulation by the PSC
- High-voltage electric transmission system: regulated by the Federal Energy Regulatory Commission (FERC)
- Customers who do not choose a competitive supplier receive Standard Offer Service (SOS) through distribution utility. SOS rates established through competitive bidding.

# Maryland Electric Utility Service Territories

Figure 11. *Maryland Electric Utility Service Territories*



# The Electric Utility Industry Restructuring Act

- 1999 legislation:
  - Customers could purchase electricity at market rates
  - Utilities divested their generation assets and received stranded cost recovery
  - Residential SOS rates frozen at 3-7.5% below 1999 rates for multi-year period
- Merchant generators, consumer advocates and free-market advocates opposed, arguing stranded cost fees and rate freeze would limit development of competitive market.

# Changing Market Conditions Drove Legislative Action

- Merchant SOS contracts prices higher than expected
  - 2004: Pepco raised residential rates 12-16% to cover new SOS contracts
  - 2006: BGE filed for 72% rate increase to cover new SOS contracts
- Significant backlash, deregulation branded a “failure” and “anti-consumer”
- Legislature adopted rate relief plan
- Change in Governors and new Commission appointed
- Prices moderated and efforts to repeal electric restructuring in Maryland lost urgency

# Maryland's Competitive Electricity Markets Today

- MD is part of PJM Interconnection (PJM), an RTO responsible for operating regional electricity markets and balancing demand and supply across the Mid-Atlantic.
- IPPs provide about 98% of electricity generation in MD.
- Customers may purchase electricity from competitive suppliers participating in the retail market or receive SOS service from their utility.
- Retail suppliers sell electricity to participating MD customers through local utility distribution systems.

# Customers Served by Competitive Electric Suppliers*

| Utility | Residen-tial | Small C&I | Mid C&I | Large C&I | All C&I | Total |
|---|---|---|---|---|---|---|
| PE | 14.5% | 28.1% | 53.9% | 79.3% | 32.9% | 17.0% |
| BGE | 29.7% | 38.8% | 62.9% | 93.3% | 44.2% | 31.2% |
| DPL | 17.3% | 35.9% | 58.3% | 92.2% | 39.7% | 20.7% |
| PE | 25.1% | 37.9% | 56.4% | 85.1% | 44.8% | 26.9% |
| | | | | | | |
| Total | 25.8% | 36.6% | 59.5% | 89.0% | 42.1% | 27.6% |

*As of 3/31/14

# Wholesale Market Challenges

Electricity prices in MD depend on PJM market.

- Small changes to PJM wholesale rules can have big impacts on customers.
- How will PJM's proposed rule changes to attract and retain generation impact retail rates for customers?
- PJM's emphasis is on reliability and wholesale markets; state PUCs concerned about reliability and rate impacts on retail consumers.
- State efforts to support generation development pre-empted.

# Increasing Reliance on Natural Gas Poses New Challenges

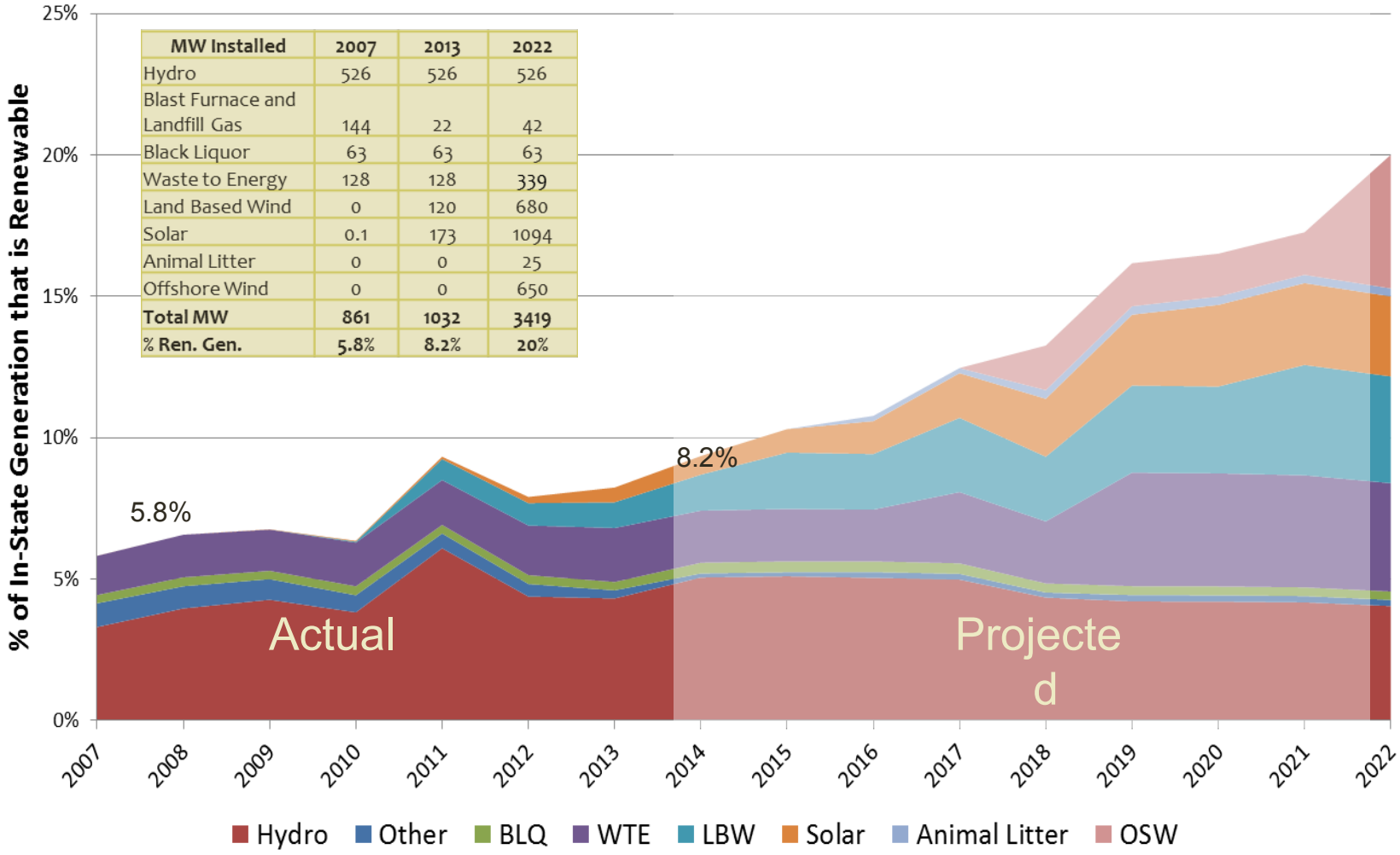
- 80 GW (43% of PJM's installed capacity) is gas-fired
- Marginal gas units typically set market clearing price
- Increasing reliance on gas-fired generators to serve electric loads; most generators rely on non-firm transportation
- Polar Vortex/ frigid weather events in the Northeastern U. S. 2014 → wholesale elec prices hit $1000+/MW
  - MD retail customers with variable rate contracts saw electric bills skyrocket by as much as 5x

# Maryland's Public Policy Goals

- Reduce Greenhouse Gas Emissions 25% by 2020
- Increase renewable energy development
  - Renewable Portfolio Standard: 20% by 2022
  - Offshore Wind Energy Act
  - Net metering for distributed solar
- Increase energy efficiency and demand response
  - EmPOWER Maryland: reduce energy consumption and peak energy demand by 15% by 2015
- Ensure reliable electricity supply at a reasonable cost

# Achieve 20% Renewables by 2022

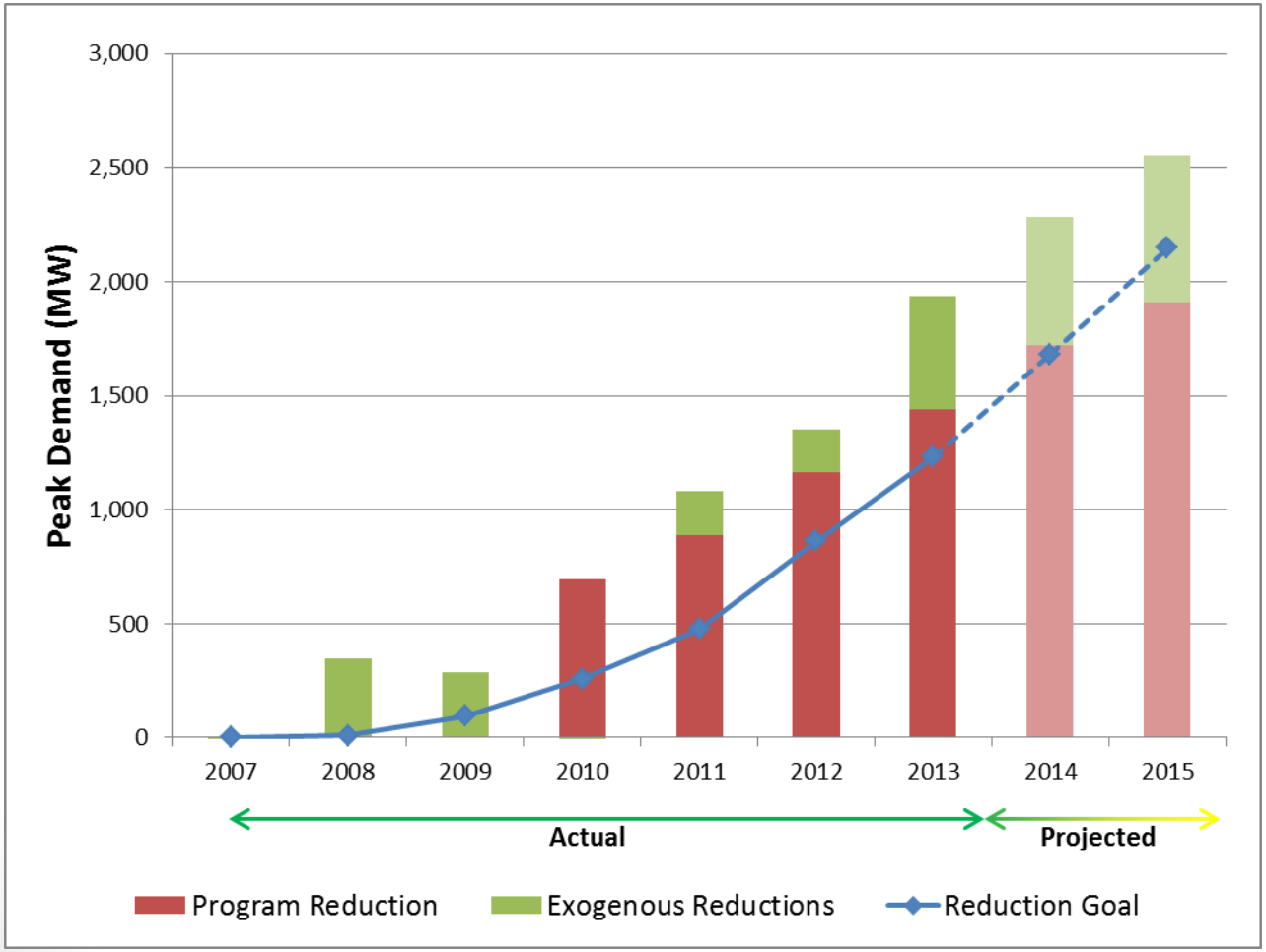
| MW Installed | 2007 | 2013 | 2022 |
|---|---|---|---|
| Hydro | 526 | 526 | 526 |
| Blast Furnace and Landfill Gas | 144 | 22 | 42 |
| Black Liquor | 63 | 63 | 63 |
| Waste to Energy | 128 | 128 | 339 |
| Land Based Wind | 0 | 120 | 680 |
| Solar | 0.1 | 173 | 1094 |
| Animal Litter | 0 | 0 | 25 |
| Offshore Wind | 0 | 0 | 650 |
| **Total MW** | **861** | **1032** | **3419** |
| **% Ren. Gen.** | **5.8%** | **8.2%** | **20%** |



# Net Metering in Maryland

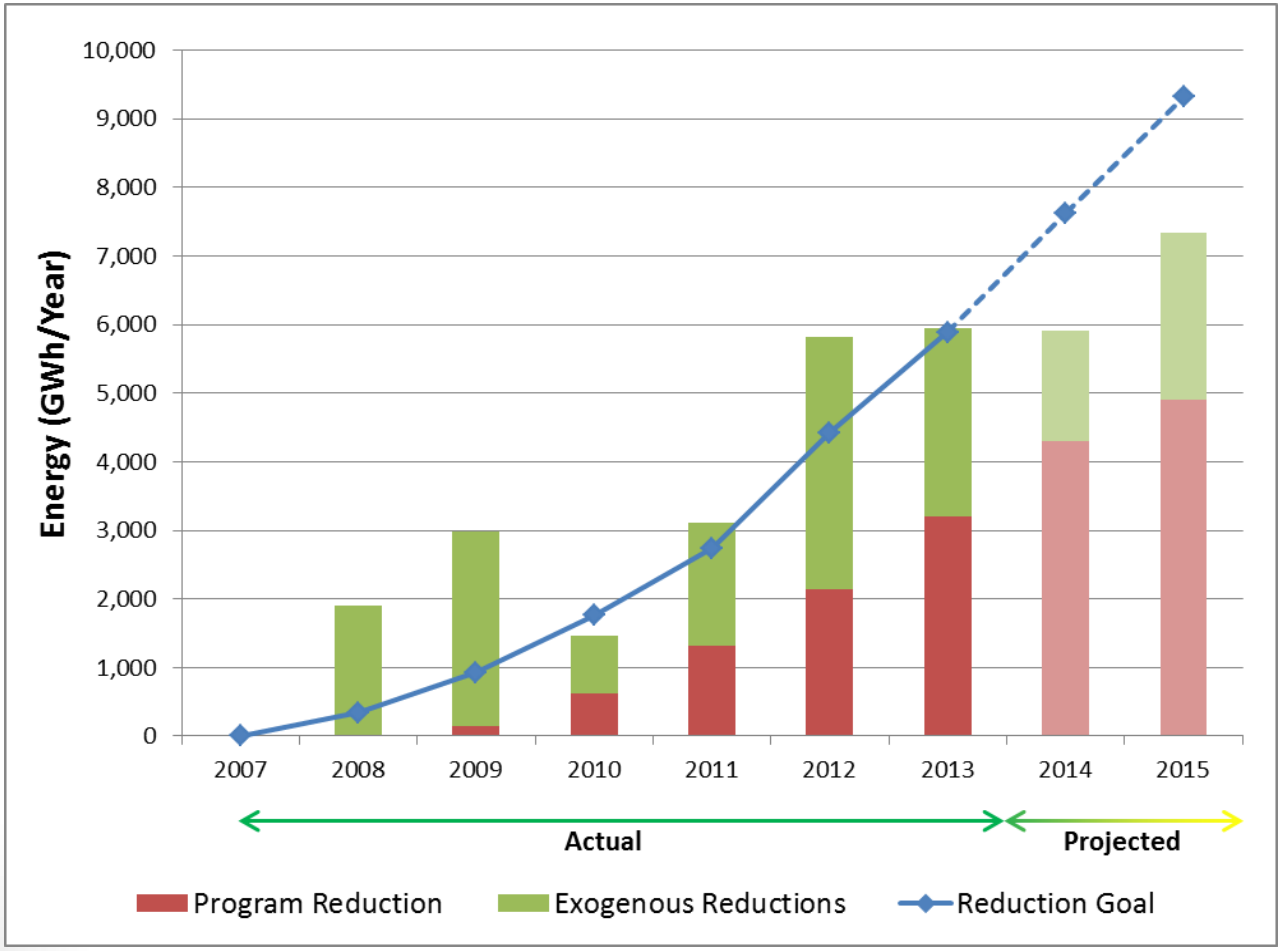
- 1,500 MW limit
- Eligible Customer/Generator 2 MW limit; some aggregation allowed
- Demand and Stand-by Charges prohibited
- Paid based on Generation Value only
- Customer/Generator keeps RECs

# EmPOWER Maryland: Peak Demand Reduction




- 14.6% reduction to date
- Equivalent to 8 peaker plants avoided
- Over $281M in PJM revenue by 2017
- 17.6% reduction projected by

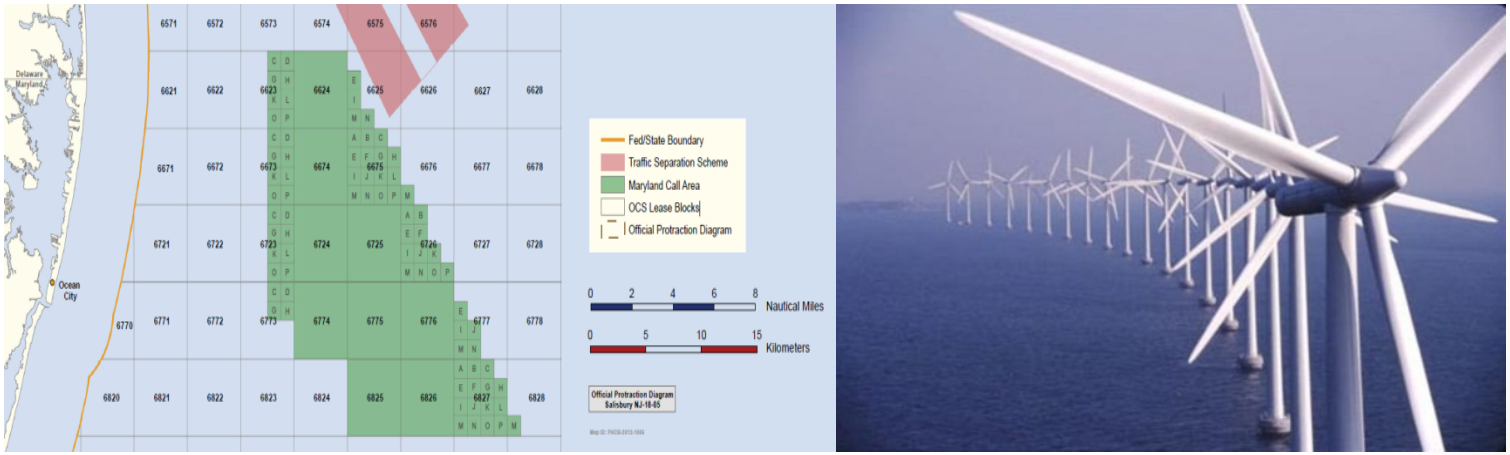
# EmPOWER Maryland: Electricity Savings




- 10.1% reduction to date
- Over 1 million residential participants, nearly 37,000 C&I participants, and 25 million light bulbs rebated
- Over $3.7 B in lifetime energy savings

# Offshore Wind

- 2013 Maryland Offshore Wind Energy Act
- Creates renewable energy credits ("ORECs") to support 500 MW of wind energy off the MD coast
- PSC developing regulations to implement



# Future Challenges

- Improving reliability and resiliency of grid
- Ensuring affordability
- Transitioning to a more distributed system-- next steps beyond net metering
- Evolving roles for distribution utilities; Utility of the Future
- Intersection of public policy goals for sustainable and affordable electricity system with competitive wholesale and retail market systems.
  - A role for integrated resource planning?