

History of Electric Regulation in Ohio

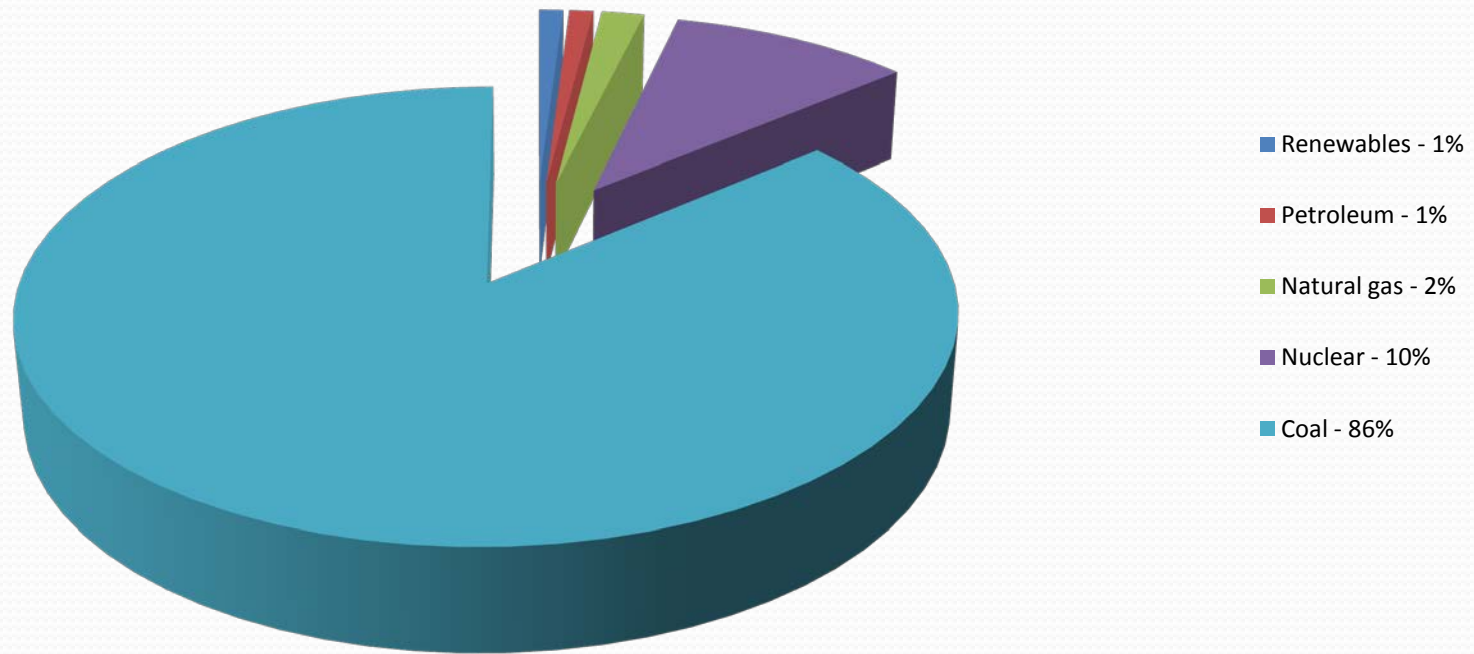


National
Association of
Regulatory
Utility
Commissioners

Ohio

**Public Utilities
Commission**

Ohio's Electric Generation Resource Mix



Why Regulation?

- Electricity has historically been considered a “natural monopoly.”
- Entry into this market required huge investments in infrastructure.
- Electricity was considered a “public good.”
- Very few people could make the investment to get into the electric business and those who did could take advantage of the monopoly.



FERC Order 888 (1996) and Order 2000 (1999)

- Determined the public interest would be best served by a competitive wholesale market
- Provided for non-discriminatory and open-access on the transmission system
- Required transmission owners to join an Independent System Operator

History of Electric Restructuring in Ohio

Senate Bill 3

A 1999 law effective January 2001 restructured Ohio's electric industry

- allowed customers to shop for electricity
- provided a five-year market development period

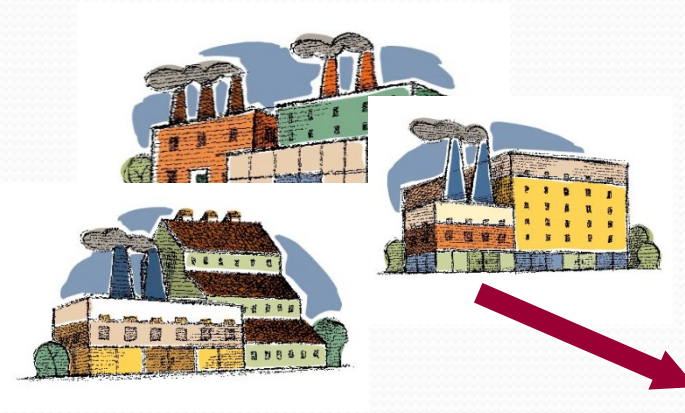
Turn of the Century System

- Unbundling of vertically integrated system
- Customers served by generator of choice
- Transmission and distribution remain regulated
- For generation, the rate of return system of regulation replaced by competition

Issues Under Restructuring

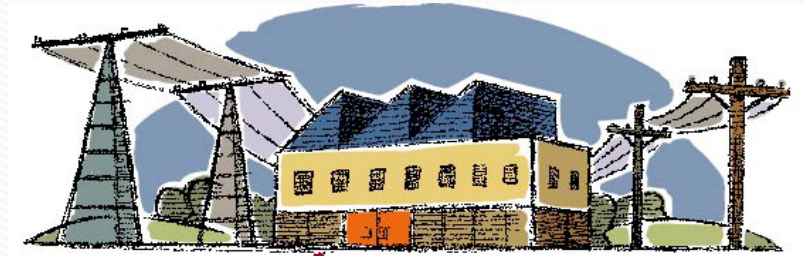
- Unbundling
- Market Power
- Transitional Issues
- Independent System Operation
- Social Issues
- Environmental Issues
- Taxes

Unbundling



Transmission
Remains regulated by FERC

Generation (“or supply”)
Shop for this

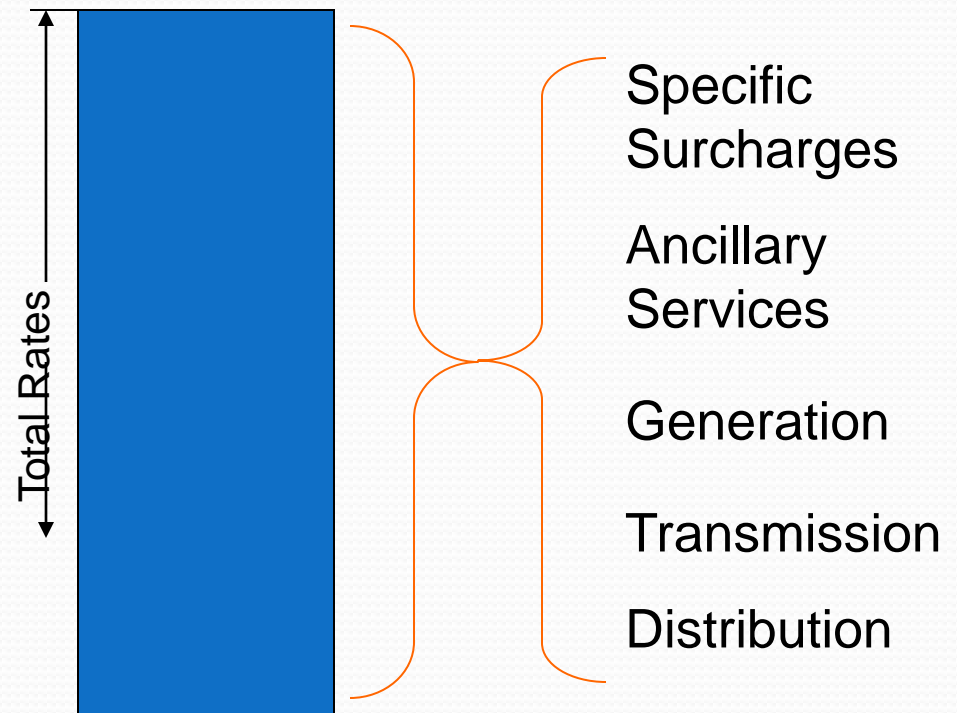


Distribution
Remains regulated by PUCO
and provided by your local
utility.

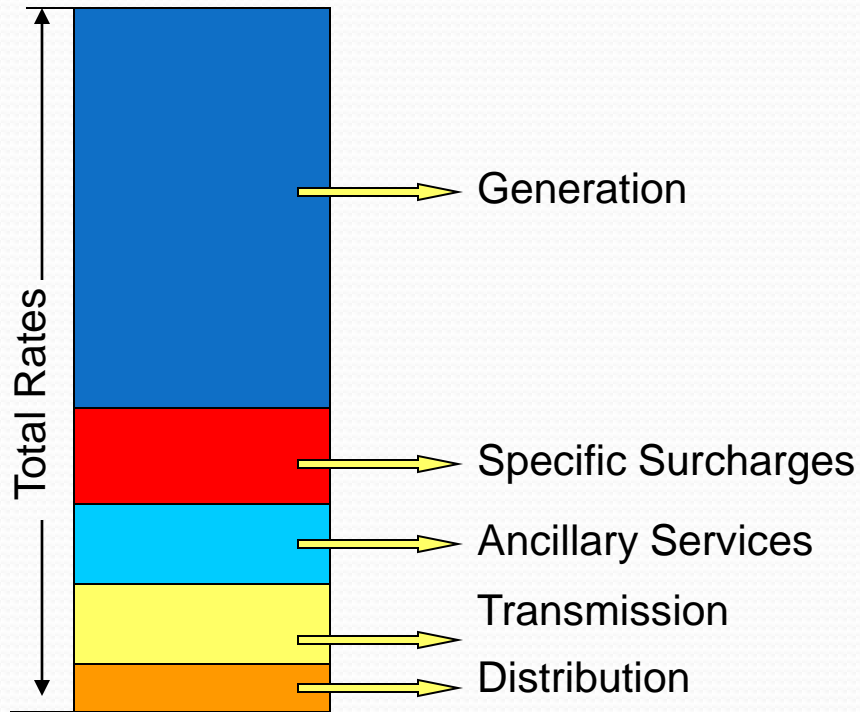


“Bundled” Rates

- Rates were previously a “bundle” of costs for different services.
 - Generation
 - Transmission
 - Distribution
 - Ancillary Services
 - Specific Surcharges



“Unbundled” Rates



Electric Restructuring would “unbundle” the rates so the generation component could be shopped for, and priced at “market.” The bill anticipated that market rates would be lower than regulated rates.

Transitional Issues

Temporary issues pertaining only to the period of transition from a regulated to a competitive industry.

- ***Timing***
 - How soon full competition can begin
- ***Stranded Costs***
 - Production
 - Regulatory

Social Issues

- Universal Service
- Provider of Last Resort
- Low Income Programs
- Consumer Education
- Metering & Billing
- Unfair & Deceptive Practices
 - Price Disclosure
 - Slamming
 - Cramming

Focus Regulatory Shift to Market Monitoring & Development

The ability to control prices and product quality

Vertical

A vertically integrated company favors its own or an affiliates generation over alternatives through non-price barriers.

A single supplier or group of suppliers has a strategic advantage in terms of access to customers relative to other suppliers.

Horizontal

A single supplier or group of suppliers has undue influence on the price of the product due to concentration of market share that can be used strategically.



Suppliers must be certified for consumer protection

- PUCO certifies all electric suppliers
- Suppliers are reviewed for:
 - technical capabilities
 - financial capabilities
 - managerial capabilities
- Ensures these companies are qualified to do business in Ohio

Governmental Aggregation: The power of group buying

Ohio Electric Choice allowed for local governments to join all of the customers in a community into a single buying group.

- Most cases “opt-out” is used
- Community passes a ballot issue
- Everyone in community *automatically* enrolled and a supplier is chosen for the group
- Everyone given a chance to “opt-out” or say you *don’t* want to participate

What happened during the Market Development Period?

- Initial results early during the period showed significant “switching” in some service territories primarily due to high costs in the northern part of Ohio.
- Governmental aggregation was the success story in Ohio.
- The moderate-to-low priced utilities experienced little, if any, customer switching.
- The success of government aggregation aside, it was apparent that a fully competitive market had not developed as quickly as envisioned by lawmakers in Senate Bill 3.

PLUS...

Many other things happened during the
5-year Market Development Period

- The California crisis and Enron scandals
- Extreme volatility and upward movement of market prices (due to rising gas prices, rising coal prices, and construction facilities not matching the projected increases in demand)
- And the slower than expected development of Independent System Operators for the transmission systems

Ohio Electric Choice

The move to Rate Stabilization Plans

- As the end of the market development period neared, there were a limited number of competitive electric suppliers and low degree of market activity. Therefore, there was concern that an immediate shift to market-based rates in 2006 would not be in the best interest of customers .
- To avoid rate “sticker shock” and gradually transition customers to market-based rates, the PUCO worked with Ohio’s electric utilities and stakeholders to develop Rate Stabilization Plans (RSPs).
- Most Rate Stabilization Plans lasted through 2008.

“Energy, Jobs and Progress Plan”

September 2007

- The plan was a comprehensive, long-term approach to the challenges of supplying reliable and affordable power.
- It also had to address the approaching expiration of the Rate Stabilization Plans.
- Attract energy jobs of the future through an Ohio advanced energy portfolio standard.
- Ensure affordable and stable energy prices to protect Ohio consumers and existing Ohio jobs.

Middle-ground Approach to Electricity Regulation

- Evidence demonstrated few competitive options existed at the retail level.
- Did not close the door on market pricing, but required a demonstration that competition is effective.
- Action was necessary to secure Ohio's energy future.
- PUCO can set rates and allow utilities to recoup the cost for new generation and modernization of the electric system.

S.B. 221 Policy Principles

- Availability of adequate, reliable, safe, efficient, nondiscriminatory and reasonably priced retail electric service
- Diversity of electricity supplies and suppliers
- Encourage innovation and market access for cost-effective supply- and demand-side retail electric service
- Transmission and distribution availability
- Recognize continuing emergence of competitive electricity market through development and implementation of flexible regulatory treatment
- Provide coherent, transparent means of giving appropriate incentives to technologies that can adapt successfully to potential environmental mandates

Reasonable Arrangements

Section 4905.31

To facilitate the state's effectiveness in the global economy, promote job growth and retention in the state, ensure the availability of reasonably priced electric service, promote energy efficiency and provide a means of giving appropriate incentives to technologies that can adapt successfully to environmental mandates.

Filed by:

- company, OR
- mercantile customer

Provides Flexibility

Cost recovery for:

- economic development/job retention
- revenue foregone from peak demand reduction/energy efficiency programs
- advanced metering/meter replacement

Infrastructure Investment

- Independent power producer can build
- ORC Section 4928.143 -- Allows distribution utility to get rate recovery for building/owning generation dedicated to Ohio consumers

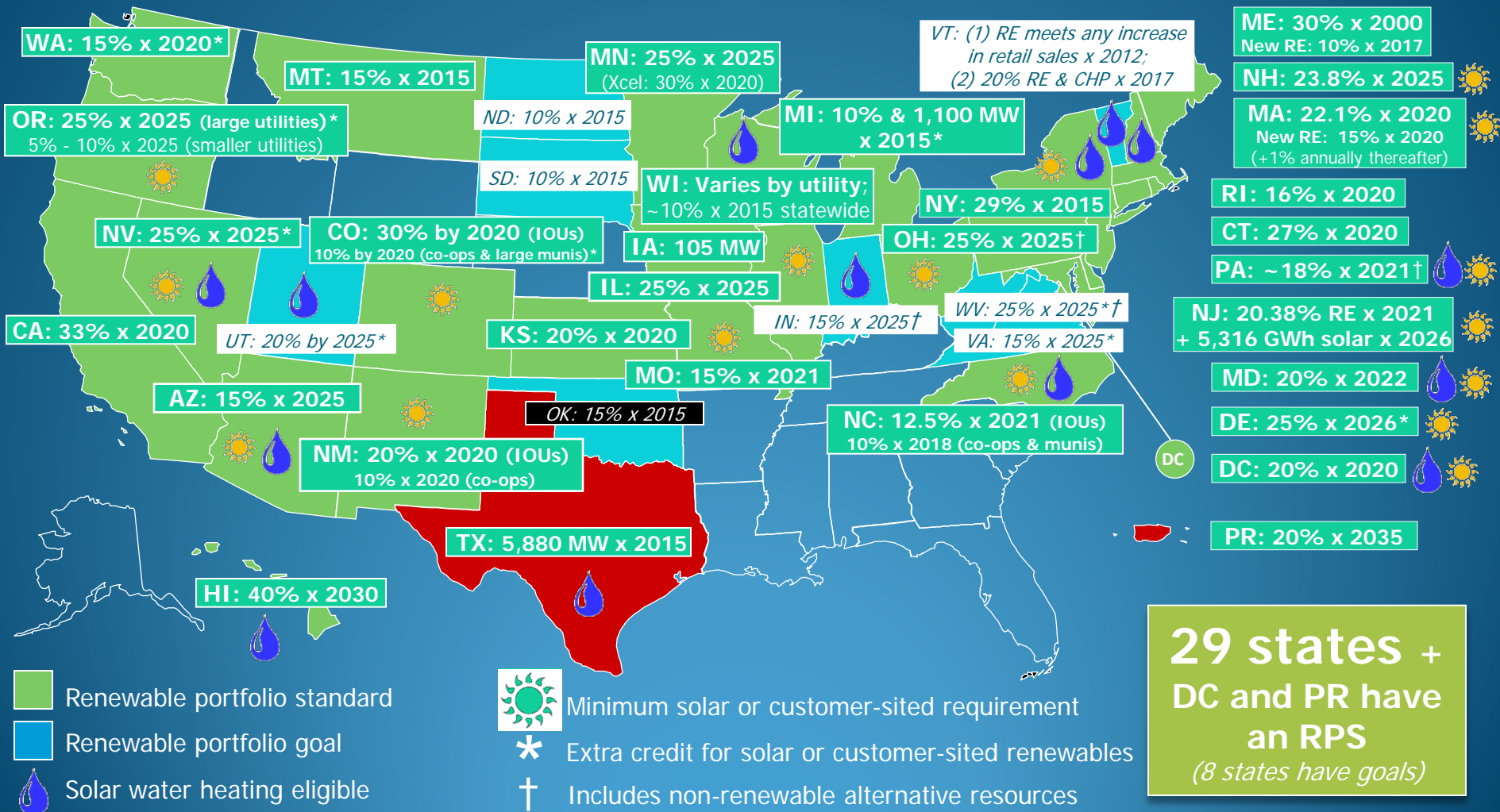
Ohio Alternative Energy Portfolio Standard

25% (of total kWh) by 2025

- Half may be from advanced energy resources
- At least half from renewable, 0.5% solar
- At least half of renewable through facilities located in the state, remainder deliverable
- Compliance payments/forfeitures
- Cost of compliance not to exceed three percent of otherwise acquired generation

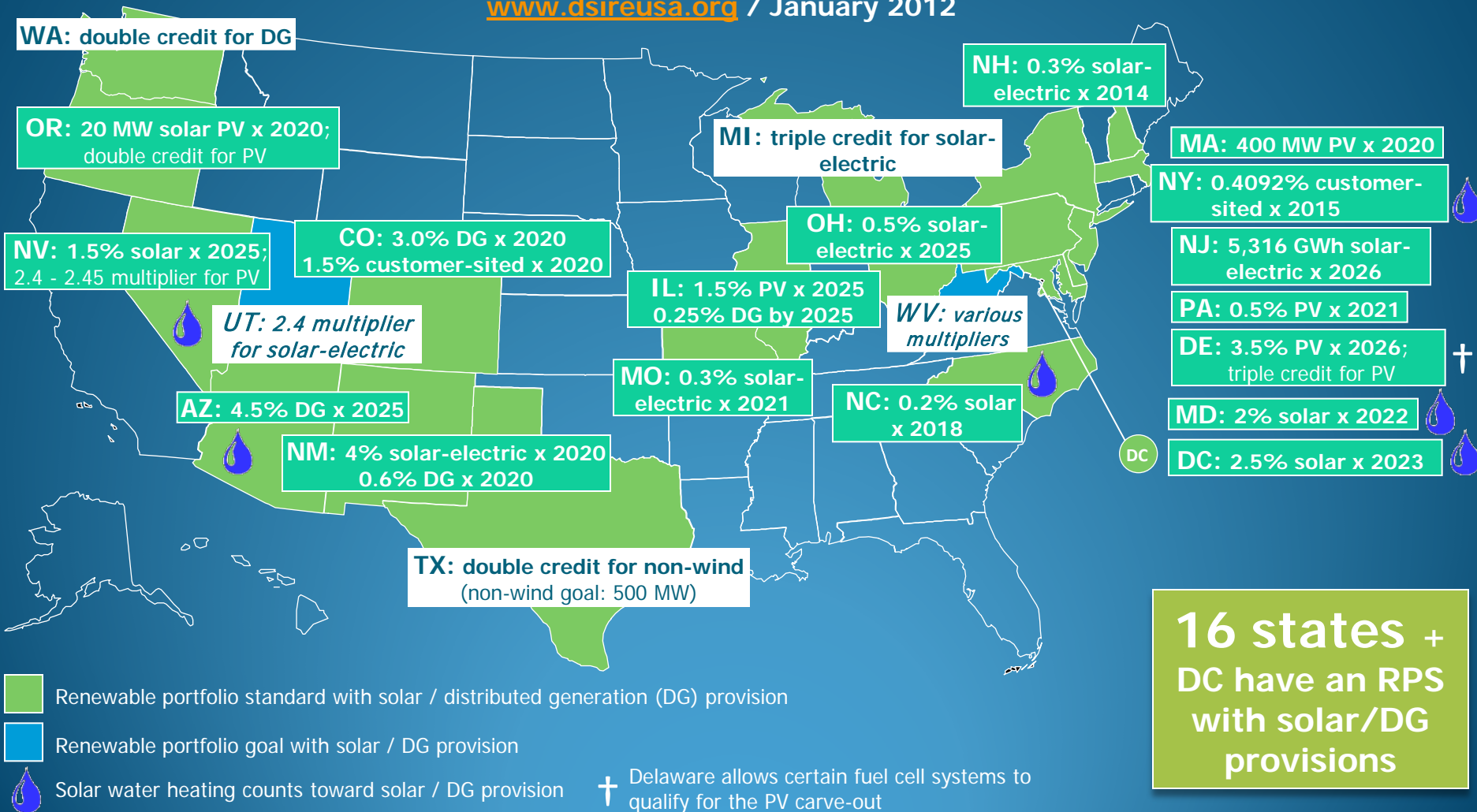
RPS Policies

www.dsireusa.org / January 2012



RPS Policies with Solar/DG Provisions

www.dsireusa.org / January 2012



16 states + DC have an RPS with solar/DG provisions



Solar



Wind



Hydroelectric



Geothermal



Fuel Cells

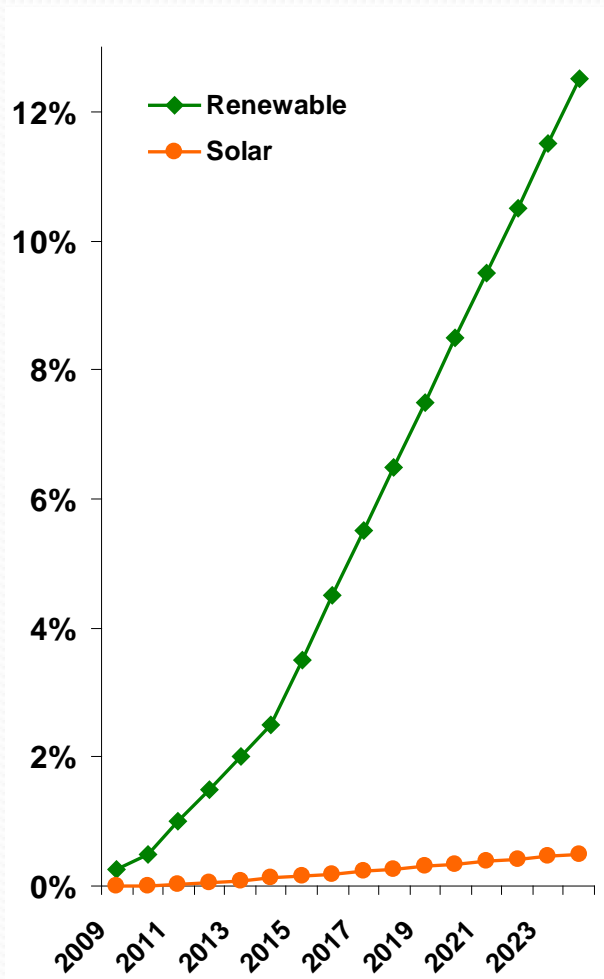


Storage



Biomass

Benchmarks



By end of year	Renewable Energy	Solar Energy
2009	0.25%	0.004%
2010	0.5%	0.01%
2011	1%	0.03%
2012	1.5%	0.06%
2013	2%	0.09%
2014	2.5%	0.12%
2015	3.5%	0.15%
2016	4.5%	0.18%
2017	5.5%	0.22%
2018	6.5%	0.26%
2019	7.5%	0.3%
2020	8.5%	0.34%
2021	9.5%	0.38%
2022	10.5%	0.42%
2023	11.5%	0.46%
2024 +	12.5%	0.5%

Renewable Energy Credits

- New Ohio Renewable Energy Credit (REC) trading market created by new law in 2009
- 1 REC = 1 mWh of electricity generated
- Utilities may own renewable facilities or purchase RECs to meet the renewable portion of the standard
- PUCO certifies resources; established tracking systems will issue and track RECs
- RECs have a 5-year lifetime following their acquisition
- Energy and RECs may be sold as separate commodities

Penalties

Utilities and electric service companies subject to compliance payments if annual renewable and solar benchmarks are not met.

Non Solar:

- Started at \$45/mWh in 2009
- 2011 penalty payment is \$45.93

Solar:

- \$450/mWh in 2009 and declines over time
- 2011 penalty payment is \$400/mWH for solar

Exceptions: force majeure; 3% cost cap

Certification Application

- “REN” certification is not mandatory for any renewable project, but necessary to create RECs eligible for Ohio utility compliance
- No fee to apply
- May certify facilities prior to commercial operation
- Application will focus on:
 - Resource/technology utilized
 - Placed in-service date
 - Deliverability to the state
- One-time review (unless significant change to facility in future)
- Interested person may seek intervention and request hearing on certification
- Certification status will be conveyed to applicable attribute tracking system

Renewable Applications Received

Year	Filings
2009	187
2010	1,072
2011	3,248
2012	37
Totals	4,544

Application Filed as of 1/18/2012

Renewable Energy Facilities

Certified Renewable Energy Generating Facilities						
Resource	Facilities Certified			Capacity (megawatts)		
	Totals	Ohio	Contiguous	Totals	Ohio	Contiguous
Biogas - Anaerobic Digestion	6	3	3	6.3	3.5	2.8
Biogas - Food Processing	3	3	0	2.5	2.5	0
Biogas - Landfill Gas	33	9	24	353	107.8	244.7
Biomass - Wastewater Treatment	1	1	0	0.34	0.34	0
Biomass - Wood Waste	1	1	0	177	177	0
Biomass - Paper Manufacturing	4	3	1	**Co-Firing**		
Biomass - Utility Scale Co-Firing	7	7	0			
Abandoned Coal Mine Methane	1	1	0	49	49	0
Hydroelectric	3	1	2	123.1	1.1	122
Solar Photovoltaic	3,910	506	3,404	130.4	42.3	88.1
Solid Waste	3	2	1	98	42.8	55
Wind	37	20	17	2,444	416.9	2,027.2
Totals:	4,009	557	3,452	3,383	843.2	2,539.8

Co-Firing Projects have been included in the number of facilities certified but have been excluded from the megawatt capacity summary due to their variable nature

Facilities Certified as of 12/31/2011

Wind Momentum



- ❖ Federal PTC (Production Tax Credit)
- ❖ State Renewable Portfolio Standards (RPS)
- ❖ Technological Improvements



- ❖ Price Volatility for Other Fuels (i.e., Natural Gas)
- ❖ Interest in Green Power / Clean Energy Sources
- ❖ Climate Change / Energy Independence

Wind farms in Ohio can help provide renewable resources to meet Ohio's Alternative Energy Portfolio Standards.



But Also:

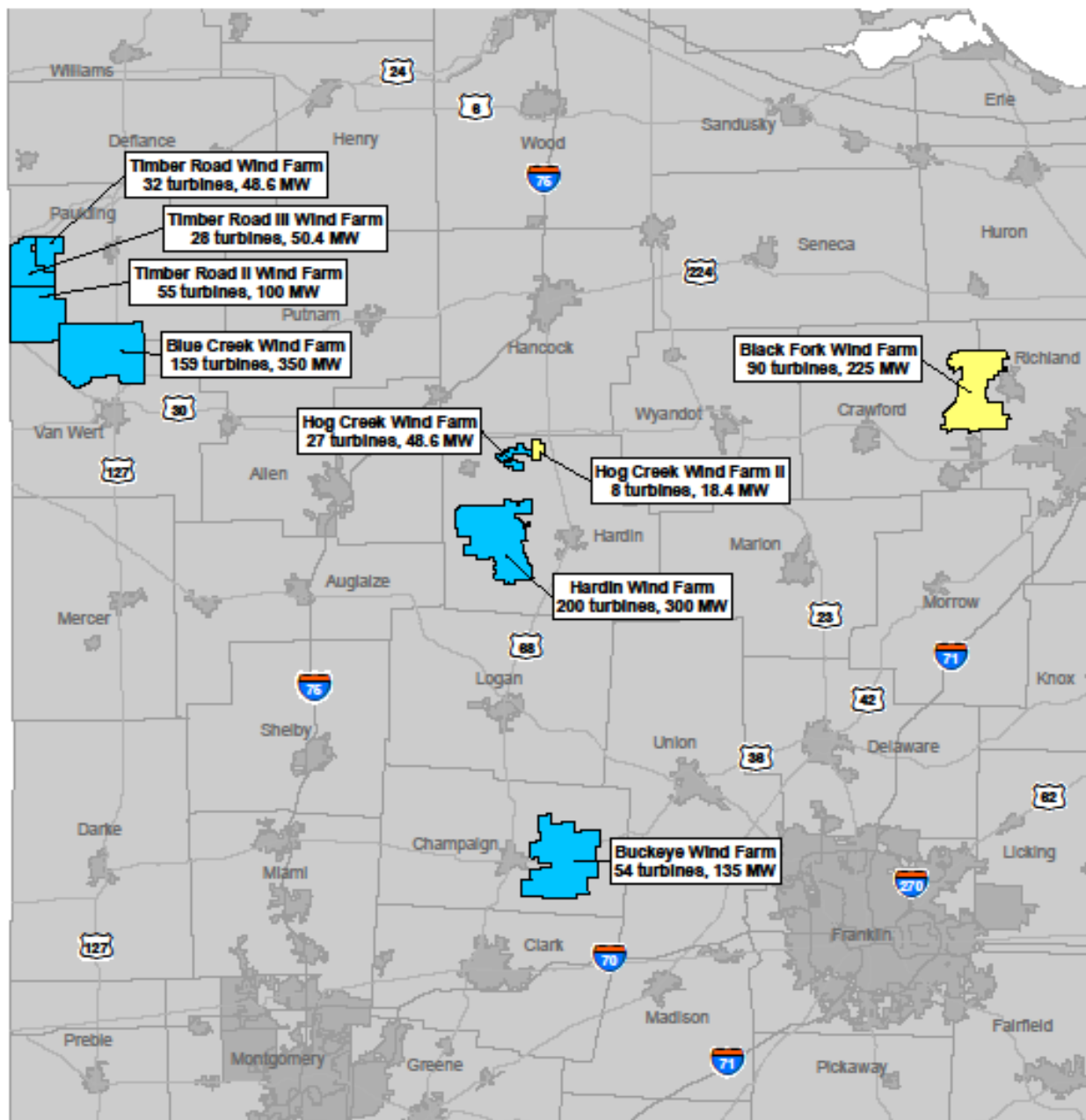
A small wind generator owned by a retail customer may enable the customer to use a renewable resource to offset his electrical demand and potentially earn a credit for net metering on his electric bill.

OHIO WIND TOTALS				
			Certified	Pending
Megawatt Totals:			1,051	755
Turbine Count Totals:			571	366
Total Potential Megawatts:			1,806	
Total Potential Turbines:			937	
Received Certificate of Environmental Compatibility and Public Need				
<u>Case No. / Project</u>	<u>County</u>	<u>Date Certified</u>	<u>Number of Turbines</u>	<u>Certified MW's</u>
08-0666-EL-BGN / Buckeye Wind Project	Champaign	22-Mar-10	54	135
09-1066-EL-BGN / Blue Creek Wind Farm Project	Paulding/Van Wert	23-Aug-10	159	350
09-0277-EL-BGN / Hog Creek Wind Farm I	Hardin	22-Mar-10	27	48.6
09-0479-EL-BGN / Hardin Wind Farm	Hardin	22-Mar-10	200	300
09-0980-EL-BGN / Timber Road I Wind Farm	Paulding	23-Aug-10	32	48.6
10-0369-EL-BGN / Timber Road II Wind Farm	Paulding	18-Nov-10	55	150.4
10-0369-EL-BGN / Timber Road III Wind Farm	Paulding	28-Feb-11	28	
10-0654-EL-BGN / Hog Creek Wind Farm II	Hardin	29-Aug-11	8	18.4
11-0757-EL-BGA / Hog Creek Wind Farm I	Hardin	25-Jul-11	See 09-0277	See 09-0277
11-1995-EL-BGA / Blue Creek Wind Farm	Paulding/Van Wert	25-Jul-11	8	See 09-1066
11-3446-EL-BGA / Hardin Wind Farm	Hardin	29-Aug-11	See 09-0479	See 09-0479
Totals:			571	1,051
Pending Certificate of Environmental Compatibility and Public Need				
<u>Case No. / Project</u>	<u>County</u>	<u>Number of Turbines</u>		<u>Pending MW's</u>
10-2865-EL-BGN / Black Fork Wind Farm	Crawford/Richland	91		200
11-2400-EL-BGN / Ashtabula Wind Energy ²	Ashtabula	28		50
11-3676-EL-BGN / Leipsic Wind Farm	Putnam	75		150
11-4886-EL-BGN / HoneyCreek Wind ²	Crawford/Seneca	115		184
12-0160-EL-BGN /Buckeye II Wind Farm ²	Champaign	57		171
Totals:		366		755

(1 - Application not yet received. Turbines/Megawatts unknown.) (2 - Application not yet received)

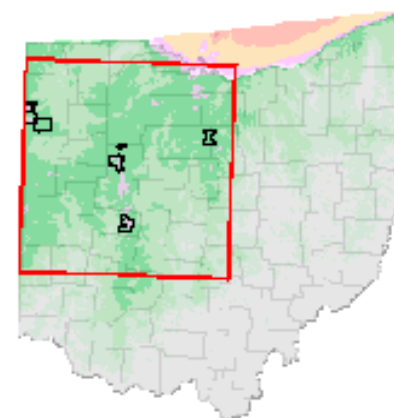
Wind Power

OPSB Cases



Wind Project Areas

- Pending
- Approved
- Populated Places

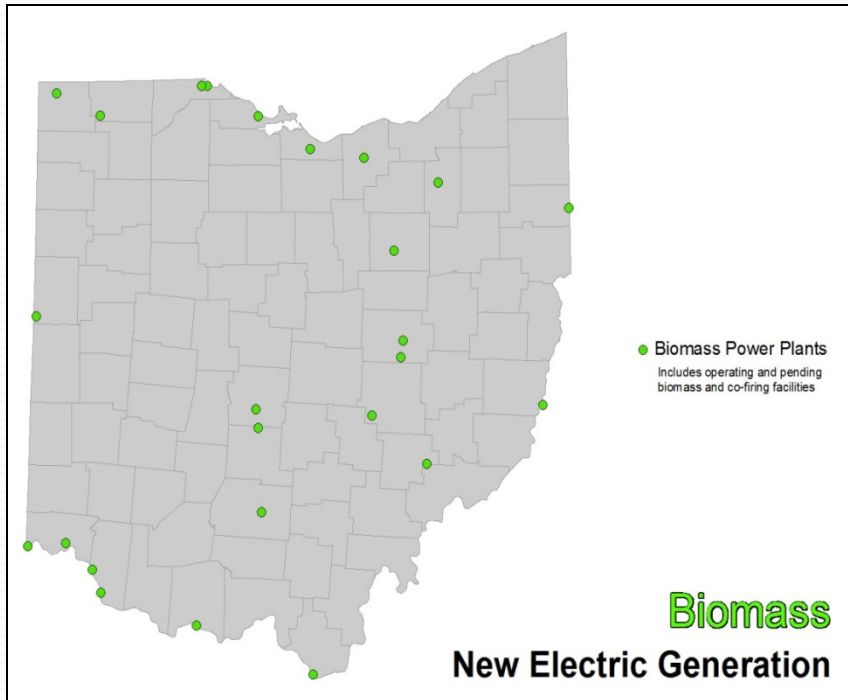


Wind Speed at 70 meters

Qualified Biomass Resources

- Biogas: landfill methane gas or anaerobic digestion of organic materials such as animal waste, bio-solids, food waste, agricultural crops and residues, solid waste
- Agricultural crops, tree crops, crop by-products and residues
- Wood and paper manufacturing waste
- Forestry or vegetation waste
- Algae

Utility-scale biomass projects



- Nine utility applications filed for plants using biomass or biomass co-fired with coal or pet coke
- One private 200 MW (2012) plant certified
- Utility RFP's have been issued for biomass fuel
- Ohio Solid Biofuel Working Group to promote fuel supply development

Ohio EDU 2009 & 2010 Requirements and Performance under the Alternative Energy Portfolio Standard (AEPS), ORC 4928.64

Note: Contents based on Companies' annual compliance filings - numbers may be adjusted following Commission review & decision

2009

AEP-Ohio Columbus Southern Power
Ohio Power
Total AEP - Ohio

Dayton Power & Light

Duke - Ohio

First Energy Cleveland Electric Illuminating
Ohio Edison Company
Toledo Edison Company
Total FE (Ohio EDUs)

EDU TOTALS

Renewable Requirement - Net of Solar		Solar Requirement	
Obligation (MWhs)	Performance (MWhs)	Obligation (MWhs)	Performance (MWhs)
49,052	49,052	798	68
63,242	63,242	1,028	95
112,294	112,294	1,826	163
28,714	28,714	468	265
42,281	42,281	688	608
42,228	42,228	687	23
51,387	51,387	836	27
22,314	22,314	363	11
115,929	115,929	1,886	61
299,218	299,218	4,868	1,097

2010

AEP-Ohio Columbus Southern Power
Ohio Power
Total AEP-Ohio

Dayton Power & Light

Duke - Ohio

First Energy Cleveland Electric Illuminating
Ohio Edison Company
Toledo Edison Company
Total FE (Ohio EDUs)

EDU TOTALS

Renewable Requirement - Net of Solar		Solar Requirement	
Obligation (MWhs)	Performance (MWhs)	Obligation (MWhs)	Performance (MWhs)
95,847	95,847	2,687	2,687
121,676	121,676	3,417	3,417
217,523	217,523	6,104	6,104
58,213	58,213	1,391	1,391
49,502	49,502	1,090	1,090
80,052	80,052	2,298	1,729
100,350	100,350	2,857	2,151
42,551	42,551	1,220	918
222,953	222,953	6,375	4,798
548,191	548,191	14,960	13,383

* CRES numbers not portrayed on this summary sheet

* Solar compliance shortfalls addressed via *force majeure* requests

* 2010 Solar Obligation includes compliance shortfalls from 2009

Advanced Energy Resources

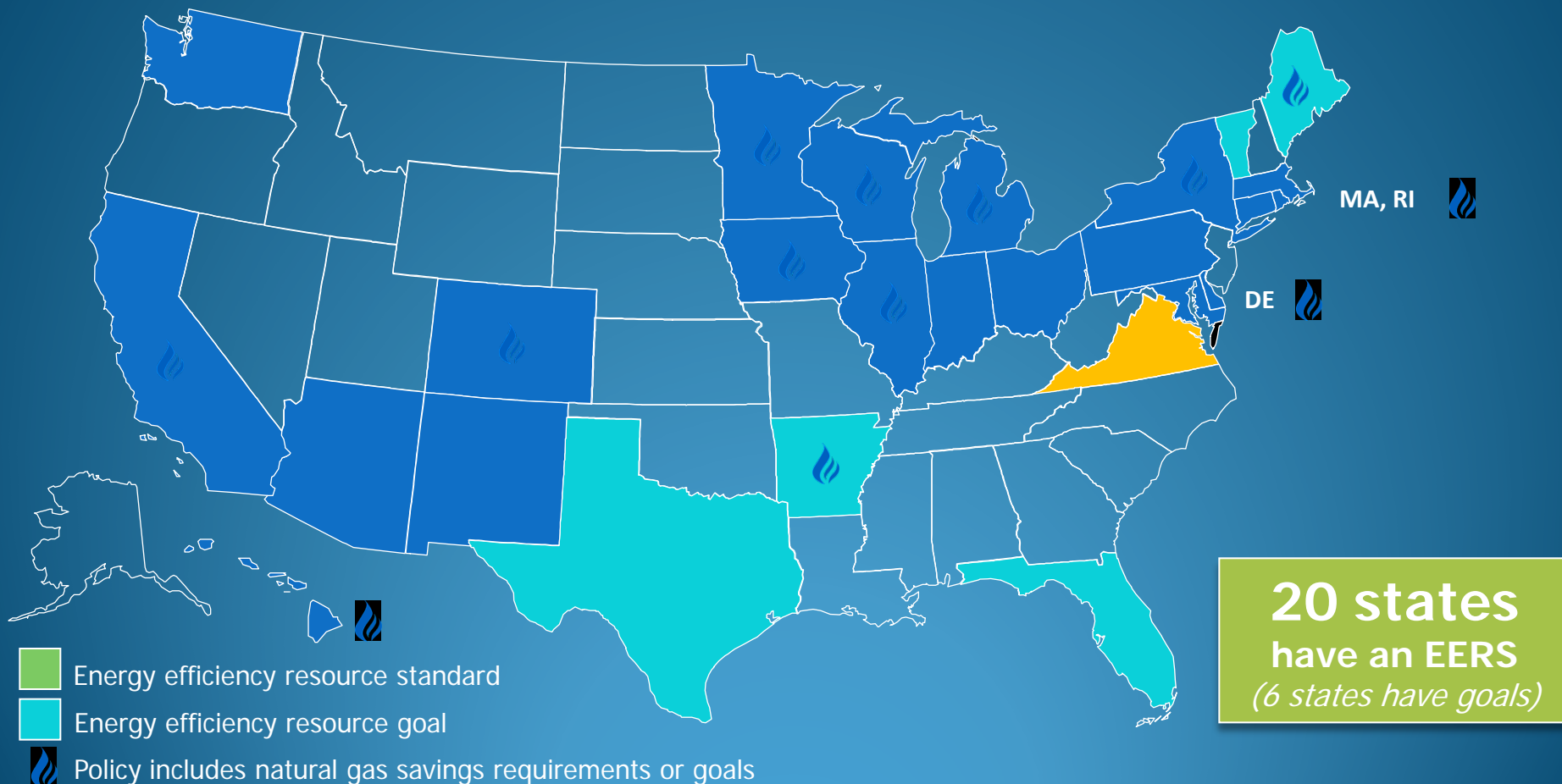
- Clean coal
- Nuclear
- Fuel cells
- Customer co-generation
- Advanced solid waste conversion
- Utility generation plant or demand-side management efficiency measures
- RECs not created from advanced resources

Energy Efficiency and Demand Reduction Benchmarks - SB 221 (OAC 4901:1-39)

- Establishes requirements and processes to determine specific benchmarks for energy efficiency and peak reduction programs.
- Establishes energy usage and demand baselines for measuring annual energy savings and demand reductions.
- Provides mechanisms by which investments achieve energy savings and demand reductions by mercantile customers in their own facilities and can be recognized in electric utility programs as contributing to specific levels of energy savings and demand reductions.

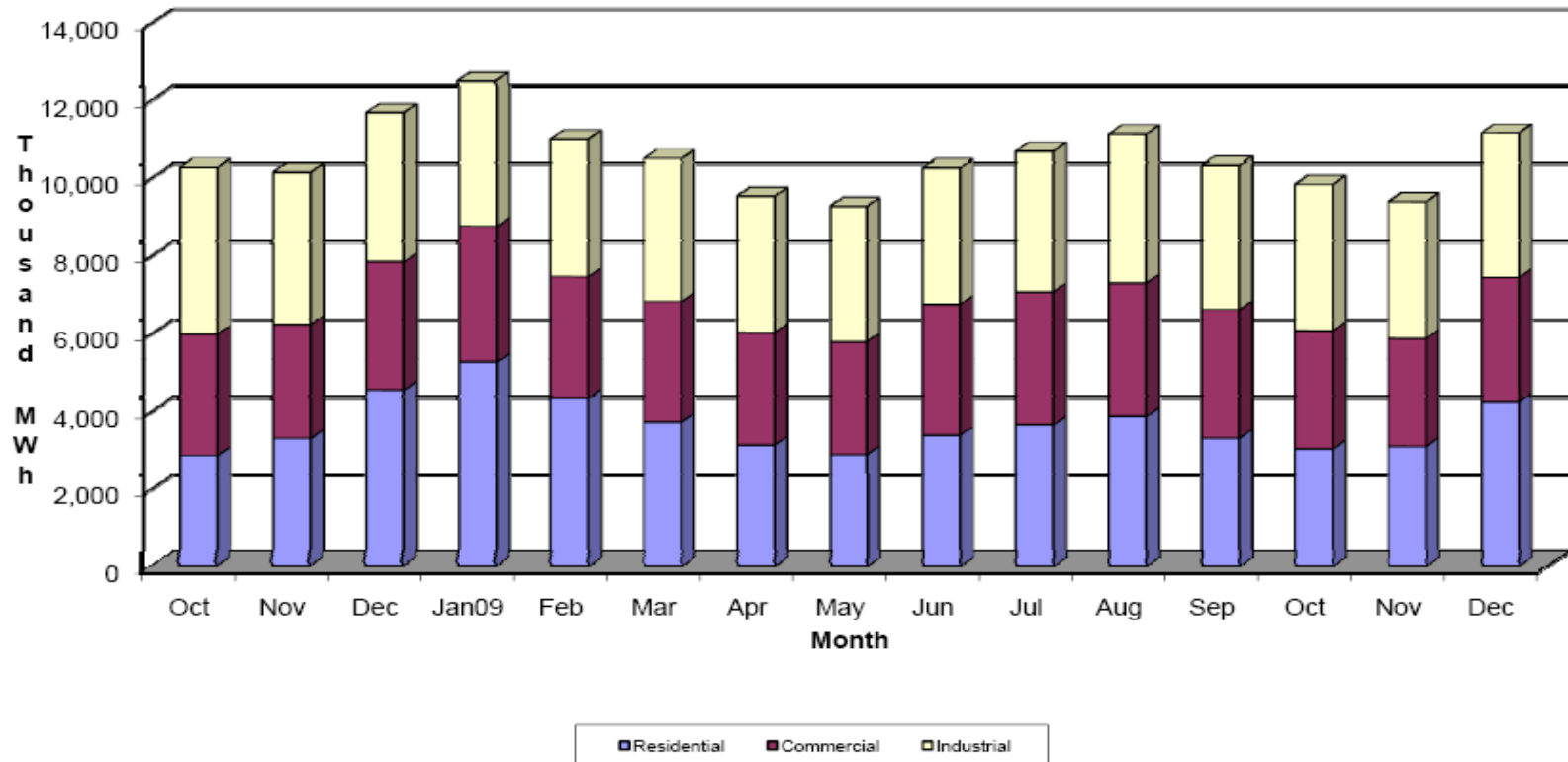
Energy Efficiency Resource Standards

www.dsireusa.org / December 2011



Note: See following slide for a brief summary of policy details. For more details on EERS policies, see www.dsireusa.org and www.aceee.org/topics/eers.

Electricity Consumption in Investor-Owned Electric Utility Service Areas in Ohio October 2008 – December 2009



Energy Efficiency Requirement

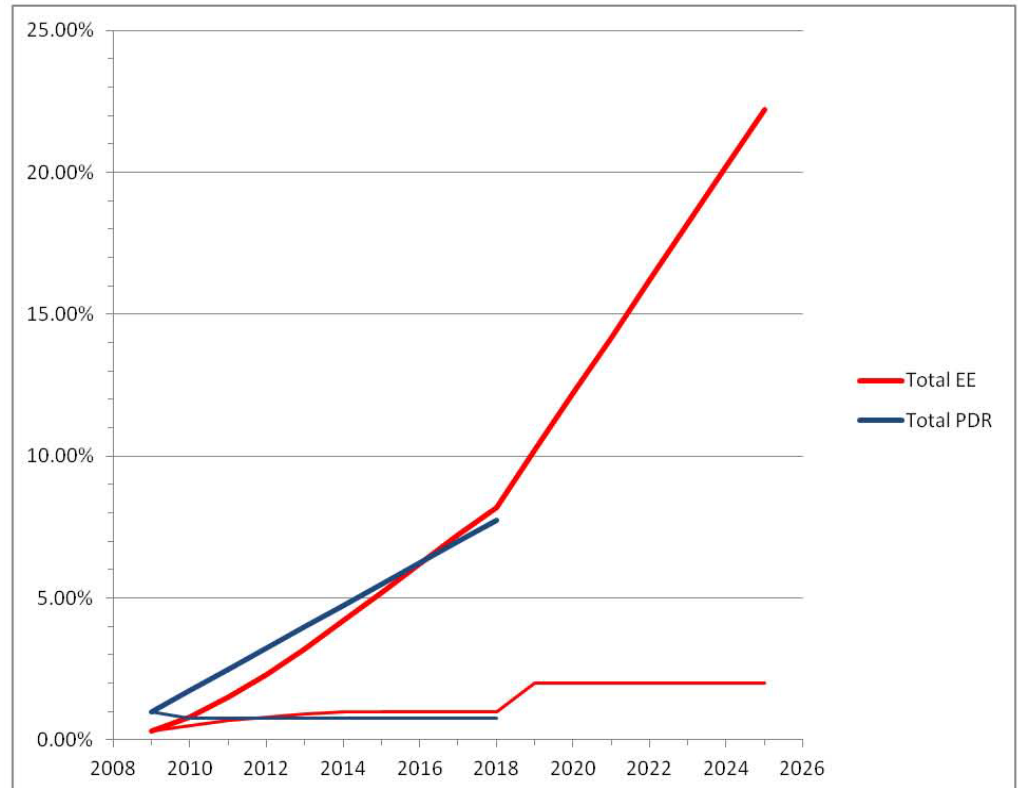
- 22% + Reduction by 2025
- Could result in annual usage at 13.8 million mWh below 2007

Peak Demand Reduction Standard

- 7.75% by 2018
- Tariffs and special contracts available to commit the demand reduction
- Customers enrolled in RTO demand response programs are counted if customer commits the peak demand reduction

Peak Demand Reduction and Energy Efficiency Benchmarks

Year	Added EE	Total EE	Added PDR	Total PDR
2009	0.30%	0.30%	1.00%	1.00%
2010	0.50%	0.80%	0.75%	1.75%
2011	0.70%	1.50%	0.75%	2.50%
2012	0.80%	2.30%	0.75%	3.25%
2013	0.90%	3.20%	0.75%	4.00%
2014	1.00%	4.20%	0.75%	4.75%
2015	1.00%	5.20%	0.75%	5.50%
2016	1.00%	6.20%	0.75%	6.25%
2017	1.00%	7.20%	0.75%	7.00%
2018	1.00%	8.20%	0.75%	7.75%
2019	2.00%	10.20%		
2020	2.00%	12.20%		
2021	2.00%	14.20%		
2022	2.00%	16.20%		
2023	2.00%	18.20%		
2024	2.00%	20.20%		
2025	2.00%	22.20%		



Peak Demand Reduction and Energy Efficiency Benchmarks

- Each Electric Distribution Utility filed a report identifying the 2009 baselines and benchmarks
- Each Electric Distribution Utility filed a program portfolio plan for energy efficiency and peak reduction programs
- Upon approval of the program portfolio plan, an Electric distribution utility may seek cost recovery
- Each year, on April 15th, the Electric Distribution utility must file a portfolio status report that demonstrates its compliance status with its benchmarks and provides an assessment of its performance.

Energy Efficiency Mercantile Applications

Pre-Pilot Mercantile Applications	
Mercantile Cases filed	404
Staff reports filed to date	401
Orders written to date	387
Pending cases	3

Pilot Program Mercantile Applications	
Total PP Mercantile cases filed to date	627
Total PP applications complete	505
Total PP applications suspended	23
Total PP pending applications	87

Total Mercantile Applications	
Total Mercantile Applications	1031
Total Mercantile Cases Complete	906
Total Mercantile Cases Suspended	23
Total Mercantile Cases Pending	90

2009		Energy Efficiency Requirement		Peak Demand Reduction Requirement	
		Obligation (MWHs)	Performance (MWHs)	Obligation (MWs)	Performance (MWs)
* AEP-Ohio	Columbus Southern Power	60,000	121,000	40	24
	Ohio Power	77,000	132,000	46	366
	Total AEP - Ohio	137,000	253,000	86	390
Dayton Power & Light		43,919	40,442	29.6	168.4
Duke - Ohio		68,233	293,023	44.6	97.4
** First Energy	Cleveland Electric Illuminating	58,155	207,795	42	72.1
	Ohio Edison Company	76,783	102,933	53	73.5
	Toledo Edison Company	31,349	39,921	20	150.3
	Total FE (Ohio EDUs)	166,287	350,649	115	295.9
EDU TOTALS		415,439	937,114	274.7	951.7

2010		Energy Efficiency Requirement		Peak Demand Reduction Requirement	
		Obligation (MWHs)	Performance (MWHs)	Obligation (MWs)	Performance (MWs)
AEP-Ohio	Columbus Southern Power	104,000	163,000	71	122
	Ohio Power	124,000	143,000	81	382
	Total AEP-Ohio	228,000	306,000	152	504
Dayton Power & Light		71,717	101,061	50.3	74.6
Duke - Ohio		109,536	310,755	33.2	40.2
** First Energy	Cleveland Electric Illuminating	150,576	273,076	71.7	71.7
	Ohio Edison Company	197,959	164,365	90.2	73.3
	Toledo Edison Company	81,204	129,964	35.2	148.9
	Total FE (Ohio EDUs)	429,739	567,405	197.1	293.9
EDU TOTALS		838,992	1,285,221	432.6	912.7

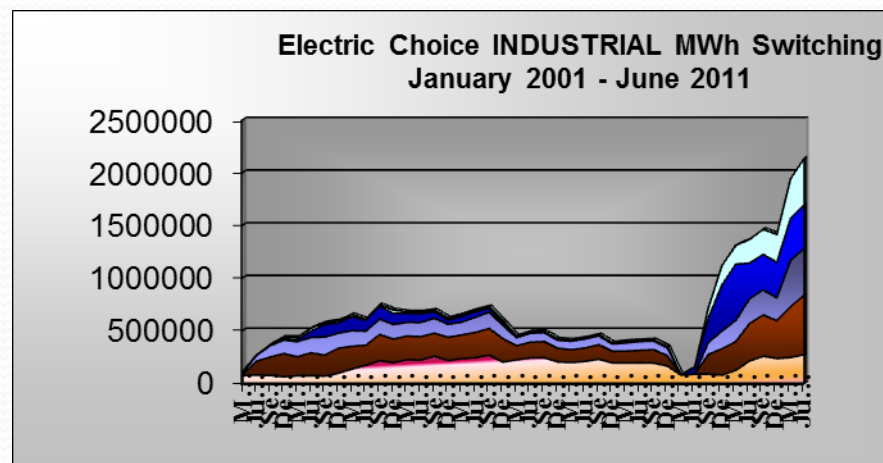
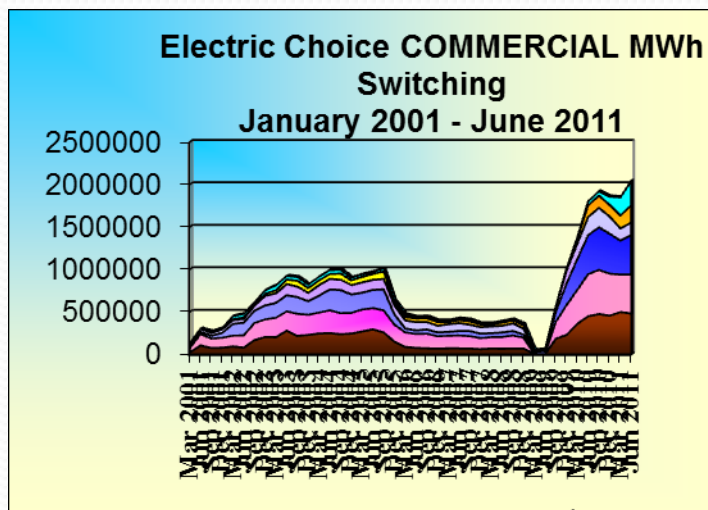
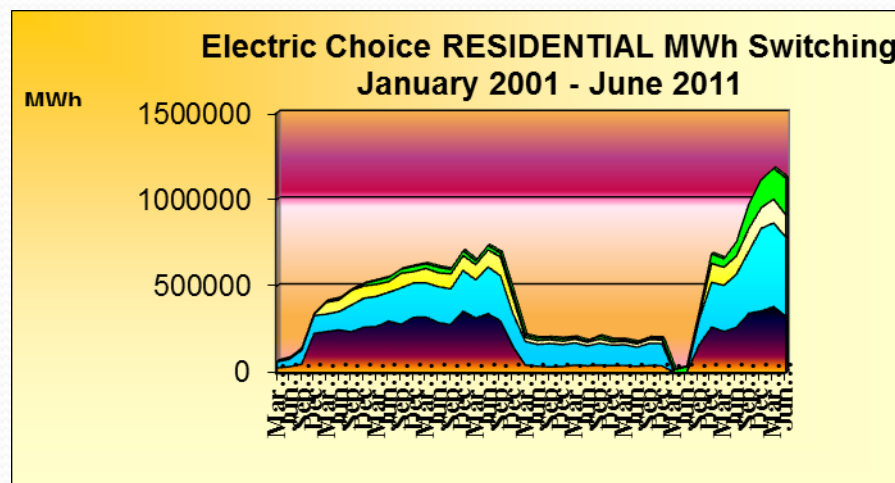
* Utility reports that PDR Obligation (benchmark) has been met because actual peak demand did not exceed baseline minus 1%.

** 2009 Energy Efficiency Obligations (Benchmarks) were amended to zero by Commission order. 2009 and 2010 performance values include projects not yet approved by the Commission. Ohio Edison 2010 benchmarks were amended to actual levels achieved.

40+ Electric Suppliers in Ohio

- AEP Retail Energy
- AK Electric Supply LLC
- Algonquin Energy Services, Inc.
- American PowerNet Management LP
- APN StarFirst LP
- ARCELORMITTAL USA LLC
- Blue Pilot Energy, LLC
- BlueStar Energy Solutions
- Border Energy Electric Services, Inc.
- Champion Energy Services, LLC
- CINCINNATI BELL ENERGY PA LLC
- Commerce Energy Inc.
- Constellation NewEnergy, Inc.
- Direct Energy Business, LLC
- Direct Energy Services, LLC
- DOMINION RETAIL INC
- DPL Energy Resources, Inc.
- Duke Energy Retail Sales, LLC
- Eagle Energy, LLC
- Energy Plus Holdings, LLC
- Exelon Energy Company
- FirstEnergy Solutions Corp.
- Gateway Energy Services Corporation
- GDF Suez Energy Resources NA, Inc.
- GearyEnergy, LLC
- Glacial Energy of Ohio, Inc.
- Hess Corporation
- Integrys Energy Services, Inc.
- Liberty Power Delaware, LLC
- Liberty Power Holdings, LLC
- Linde Energy Services, Inc.
- MC SQUARED ENERGY SERVICES LLC
- MidAmerican Energy Company
- NextEra Energy Services Ohio, LLC
- Noble Americas Energy Solutions LLC
- NOPEC, Inc.
- Palmco Energy OH, LLC
- SMART Papers Holdings, LLC
- Spark Energy, L.P.
- STARION ENERGY PA INC
- TEXAS RETAIL ENERGY LLC
- Vectren Retail, LLC

Ohio Electric Choice Switching



Things that haven't changed:

- Same safe, reliable service
- Local utility still delivers the electricity
- Local utility still maintains the poles and wires
- Still call your local utility in case of a power outage
- Still get service even if choose not to change
- Low income programs like PIPP continue

