BEFORE THE
PUBLIC UTILITIES COMMITTEE
OF THE OHIO SENATE

SENATOR BILL SEITZ, CHAIRMAN

Substitute Senate Bill 58 Hearing
November 6, 2013

TESTIMONY OF THE OHIO MANUFACTURERS' ASSOCIATION BY J. RICHARD HORNBY

Good afternoon. Thank you for the opportunity to appear before you today.

My name is Richard Hornby. I am a Senior Consultant with Synapse Energy Economics, a consulting firm based in Boston, Massachusetts. I have worked in the energy industry in Canada and the US for more than 35 years. I started in Canada as a project engineer, then served as a senior civil servant. I have been a regulatory consultant since coming to the US in 1986. My primary areas of expertise are resource planning and ratemaking in the electricity and natural gas industries.

As Mr. Belden explained, Ohio's energy efficiency programs are very important to the state's manufacturing companies, as they are to all electricity customers in the state[1]. My testimony will explain how Senate Bill 58 (SB58), as written, would lead to lower spending on efficiency and increased electricity rates for your constituents. Mr. Seryak will explain how SB58 limits the reduction in energy use the state would achieve under the Energy Efficiency Resource Standard (EERS). Ms. Bojko will explain how

[1] Neubauer, Max et al. *Shaping Ohio's Energy Future: Energy Efficiency Works.* American Council for an Energy Efficiency Economy (ACEEE), March 2009, http://aceee.org

SB58 limits the ability of the Ohio Public Utilities Commission (PUCO) and ratepayers to ensure that electricity rates remain reasonable over time.

My testimony makes two main points:

- First, Ohio's existing EERS policy and ratemaking framework is fundamentally sound. It may need a few refinements, but it is providing the state's investor-owned utilities (IOUs) the opportunity to comply with the EERS, and to receive a reasonable financial incentive when they do so. Under this framework the PUCO sets your constituents' retail electricity rates to recover reasonable costs.
- Second, SB58 as written will change this existing framework in ways that would lead to increases in retail rates that are not reasonable. Specifically, certain provisions of the bill would increase the EERS performance incentives IOUs receive to one of the highest—if not the highest—levels in the country; meanwhile, utilities in other states are achieving comparable reductions with much lower incentive levels. The proposed incentive increases will reduce the amount available for efficiency programs in order to fund these higher utility incentives. Other provisions of the bill would reduce the quantity of reductions IOUs are expected to bid into the PJM capacity auctions, thereby limiting the extent to which IOUs will be expected to 1) monetize EERS demand reduction, and 2) suppress wholesale prices for electric capacity. Both of these limitations will cause your constituents to pay higher than necessary prices for electric supply service.

The fact that I do not address other provisions of SB58 does not mean that I support those other provisions.

To place my key points in context, I am going to quickly summarize three relevant features of Ohio's electric sector.

- First, the state's retail customers receive their service from companies in one of three categories: IOUs, rural electric cooperatives, and municipal electric suppliers. There are four IOUs: FirstEnergy, American Electric Power (AEP), Duke Energy Ohio, and Dayton Light and Power (DP&L). In aggregate, these IOUs distribute the vast majority of electricity to retail customers in Ohio. My understanding is that SB58 only applies to the IOUs, so my remaining remarks are limited to them.

- Second, traditional electric service has been unbundled into three separate services: generation, transmission, and distribution. As a result of deregulation and restructuring, Ohio's IOUs are essentially providing distribution service, only; they have divested, or are in the process of divesting, their generation and transmission assets. As a result retail customers of all IOUs acquire their electricity supply service either through the Standard Offer Service (SSO) or a Competitive Retail Electricity Supplier (CRES). A key point of distinction is that distribution (provided by IOUs) is a regulated service in Ohio, whereas electricity supply is a competitive service. The majority of the retail electricity supply price is set through the operation of competitive wholesale markets, not by a regulator. In contrast, the PUC sets the retail rates that IOUs charge for distribution service based on their cost of providing that service, as determined in rate cases.

- Third, because the majority of the retail electricity supply price is set through the operation of wholesale capacity and energy markets, reductions in retail customers' peak demand and annual energy resulting from EERS programs tend to "suppress"

the prices that all customers pay for capacity and energy. This is one of the many ways that EERS programs benefits all customers in Ohio, not just the subset of customers who participate in EERS programs in a given year. Exhibit JRH-1 provides a high-level illustration of price suppression, using the wholesale capacity market as an example, based on an April 2013 ACEEE report and a paper I presented on that report.[2,3] Page 1 of that exhibit illustrates that under a Business as Usual (BAU) case the price for capacity would be set at $136 per MW-day, the point where the BAU supply curve intersects the BAU demand curve. In contrast, page 2 illustrates that under a Capacity Price Mitigation case in which Ohio IOUs bid 208 MW of peak demand reduction as a capacity resource the price for capacity would be set at a lower price of $126. This is an example of wholesale price suppression, it does not analyze the remaining two phases of price suppression: (i) the process and time period through which the reduction in wholesale capacity prices is reflected in retail prices for electricity supply, and (ii) the process and time period through which the reduction in wholesale capacity prices eventually dissipates due to actions taken by suppliers in response to the lower market price.

Price suppression is a generally accepted component in the modeling and operation of wholesale capacity and energy markets, as indicated by the range of parties who have developed the estimates listed in Exhibit JRH-2. Parties may, and do, disagree over the

[2] Neubauer, Max et al., *Ohio's Energy Efficiency Resource Standard: Impacts on the Ohio Wholesale Electricity Market and Benefits to the State*, ACEEE, April 2013.
[3] Hornby, Rick and Neubauer, Max, *Demonstrating How EE in Ohio Saves Money for All Ratepayers*, ACEEE Energy Efficiency as a Resource Conference, September 2013.

calculation of certain aspects, such as magnitude and duration, but there is general agreement that it does occur.

I will now expand on the two main points of my testimony: 1) Ohio's existing EERS policy and framework is fundamentally sound, and 2) provisions in SB58 would lead to less spending on efficiency and higher retail rates for supply service.

1. Ohio's existing EERS policy and ratemaking framework is fundamentally sound

Ohio's existing EERS policy and ratemaking framework is based upon the policies set out in SB221 and the state's traditional ratemaking practices and procedures. SB221 set the annual targets for reductions in peak demand and in annual energy that IOUs were expected to achieve each year beginning in 2009 and continuing through 2024.[4]

The existing EERS framework has two key features relevant to my discussion of SB58. First, it aligns the financial interests of the IOUs with achievement of the EERS targets. Second, it ensures that the rates customers pay for electricity are reasonable.

a. Aligns financial interests of IOUs with achievement of EERS targets

The existing EERS framework enables IOUs to collect three categories of revenues from their retail customers: EERS program costs, lost distribution revenues, and an EERS performance incentive. EERS program costs are the costs of labor and materials to install efficiency measures. Lost distribution revenues are the shortfalls in recovery of fixed distribution system costs the IOUs experience as a result of retail customers using,

[4] Peak demand is the highest electricity use of a customer (or group of customers) in a year, while annual energy is the quantity of electricity a customer uses during a year.

and paying for, less energy. The performance incentive is a payment the IOU receives when it meets, or exceeds, its EERS target.

Under this framework the IOUs, as "distribution only" utilities, should be financially neutral in terms of whether their retail customers reduce their requirements through efficiency measures or meet all of their requirements through electricity supply purchases. In fact, the IOUs should have a financial preference to encourage efficiency since they receive a financial incentive if they achieve, or exceed, their target reductions under the EERS.

The EERS performance incentive provides the IOUs a share of the net benefits, or dollar savings, resulting from the EERS measures. Under the current framework, an IOU receives 5% of the net benefits if it achieves 100% of its EERS target in a year, and an increasing percentage for exceeding its EERS target, up to a maximum of 13% for reaching 115% of the target. It is interesting to note that since 2009 Duke Energy and AEP each entered settlements agreeing to meet their EERS targets under these financial terms, and DP&L has entered a proposed settlement. All three IOUs were aware of the long-term EERS targets when they entered those settlements. FirstEnergy is the only IOU whose financial arrangements were established through a litigated proceeding. As I discuss later, SB58 is proposing to increase this incentive dramatically.

b. Ensures rates customers pay for electricity are reasonable.

The second key feature of the existing EERS framework is that it helps control the rates your constituents pay for electricity. The framework accomplishes this by giving the

PUC the responsibility and authority to monitor and rule upon the amounts IOUs can recover from ratepayers.

The PUC has traditionally exercised this responsibility and authority in rate proceedings by determining the amount of each category of revenues that is reasonable for the IOU to collect for its distribution service and for its EERS programs. For example, the PUC has excluded certain categories of savings from the calculation of net benefits and has set dollar caps on the amount of EERS performance incentives each IOU can receive. It is important to note that the PUC exercises its responsibility and authority over these amounts on an ongoing basis. For example, if an IOU's circumstances change substantially, the IOU always has the opportunity to file a request with the PUC to increase the amounts it can collect. When an IOU makes such a request, representatives of ratepayers have the opportunity to intervene and examine the merits of the IOU application in detail through the discovery process.

More recently, since PJM began allowing parties to bid demand reductions into its capacity market auctions, the PUC has begun monitoring the extent to which IOUs are bidding demand reductions from their EERS programs into PJM auctions. These bid quantities are important for several reasons. First, PJM compensates IOUs for the quantity of reductions they bid, providing revenues to help fund EERS programs and thereby reducing the amount IOUs need to collect from ratepayers. Second, the demand reductions have a price suppression effect beneficial to all ratepayers, as I described earlier. Third, if the IOUs do not bid these reductions into the auctions, PJM may not realize the extent to which Ohio customers are reducing their peak demand and, as a result, may base its plans on incorrectly high forecasts of peak demand.

I understand that IOUs must exercise judgment when determining the quantity of demand reduction from a given EERS program to bid into a PJM auction—particularly for new EERS programs with limited performance histories. IOUs must bid conservatively because they are submitting bids into PJM auctions conducted up to three years in advance of the year the capacity must be provided and because PJM will impose a financial penalty on them if they cannot provide the reduction when PJM requests it. However, my experience in New Jersey, Maryland, and New England[5] indicates that a conservative bid is approximately 75% of the projected demand reduction, not the zero percent SB58 is proposing.

2. Provisions in SB58 would lead to unreasonable less spending on efficiency and increases in retail rates

a. Increases EERS Performance Incentive to Unprecedented and Unreasonable Level

Provisions in the bill increase the financial incentive IOUs receive for complying with the EERS in four ways:

i. Increasing the amount of net benefits subject to sharing. Section 4928.6611 (C) describes the shared savings incentive IOUs would receive for the after-tax net benefits from compliance activities. That section refers to compliance activities described in Sections 4928.6627 and 4928.6640, which include improvements in power plant efficiency retroactive to 2006 (bill line 2043-2058), and what appears to be savings from federal appliance standards (bill lines 2012-2019). Allowing utilities to include such claims in the calculation of net benefits from energy efficiency

[5] The New England ISO conducts similar capacity auctions three years in advance.

programs is unprecedented based on my experience and my review of utility energy efficiency performance incentives in other states.[6,7,8] In addition it is not reasonable to provide IOUs a shared savings performance incentive for upgrades to transmission and distribution lines (bill line 1904) if those upgrades result from investments in rate base on which the IOUs will earn their allowed rate of return.

ii. Eliminating the threshold level of achievement. Section 4928.6611 (C) implies that utilities would receive the proposed 33 percent after-tax share on all net benefits, rather than having to achieve 100% of their target reduction before starting to receive an incentive.

iii. Increasing the maximum after-tax percent of net benefits IOUs receive from the current 13% to 33%. At this level Ohio IOUs would be receiving one of the highest, if not the highest, shared saving performance incentive in the country based on my experience and my review of utility energy efficiency performance incentives in other states. As illustrated in the chart on page 1 of Exhibit JRH-3, other than Ohio only six states have explicit state wide reduction targets and allow their utilities a shared saving incentive. The sharing percentages in those states range from 10% to 20% on a pre-tax basis. Moreover, there is no evidence that Ohio IOUs need such a high incentive to achieve their EERS targets.[9]

iv. Eliminating the cap on the incentive. Section 4928.6611 (C) makes no reference to a cap or to the ability of the PUC to set a cap. Under the current framework, the PUC

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[6] S. Hayes et al., *Carrots for Utilities: Providing Financial Returns for Utility Investments in Energy Efficiency*, January 2011, available at http://aceee.org/research-report/u111.

[7] ACEEE data base, "State Energy Efficiency Policy," available at http://aceee.org/sector/state-policy.

[8] IEE 2013, *State Electric Efficiency Regulatory Frameworks*, July 2013

[9] Wilson, John D. et al., *Seeking Consistency in Performance Incentives for Utility Energy Efficiency Programs*, ACEEE 2010 Summer Study.

has set utility-specific caps on the absolute dollar amount each IOU can receive in a given year.

The resulting increase in the EERS performance incentive will reduce amounts spent on efficiency in order to fund the higher performance incentives.

b. Reduces obligation of IOUs to achieve reasonable levels of demand-reduction monetization and capacity price suppression

As I noted earlier, the quantity of demand reductions from EERS programs that IOUs bid into PJM auctions provides Ohio ratepayers with several important benefits: compensation from PJM that offsets EERS program costs, capacity price suppression that benefits all ratepayers, and more accurate PJM forecasts of peak demand. Synapse helped ACEEE prepare a report estimating the magnitude of capacity price suppression benefits to all Ohio customers if IOUs bid a reasonable quantity of demand reductions from EERS programs into the PJM auctions for 2017 through 2020.[10] The report also estimates energy price suppression benefits from EERS reductions in annual energy use.

Provisions in SB58 reduce the obligation of IOUs to achieve reasonable levels of demand-reduction monetization and capacity price suppression in two ways:

- Reducing IOU peak demand reduction requirements. Section 4928.665, starting at line 1708, reduces the quantity of peak demand reductions the IOUs would have to achieve. The lower the quantity of demand reductions, the lower the MW reduction the IOUs will have available to bid into the PJM capacity auctions.

[10] Neubauer, Max et al., *Shaping Ohio's Energy Future: Energy Efficiency Works*, ACEEE, March 2009, available at http://aceee.org.

- Prohibiting bidding of projected demand reductions. Section 4928.6659 (b) starting at line 2187, prohibits the PUC from requiring IOUs to bid projected reductions into PJM auctions. Again, the lower the quantity of demand reductions, the lower the MW reduction the IOUs will have available to bid into the PJM capacity auctions.

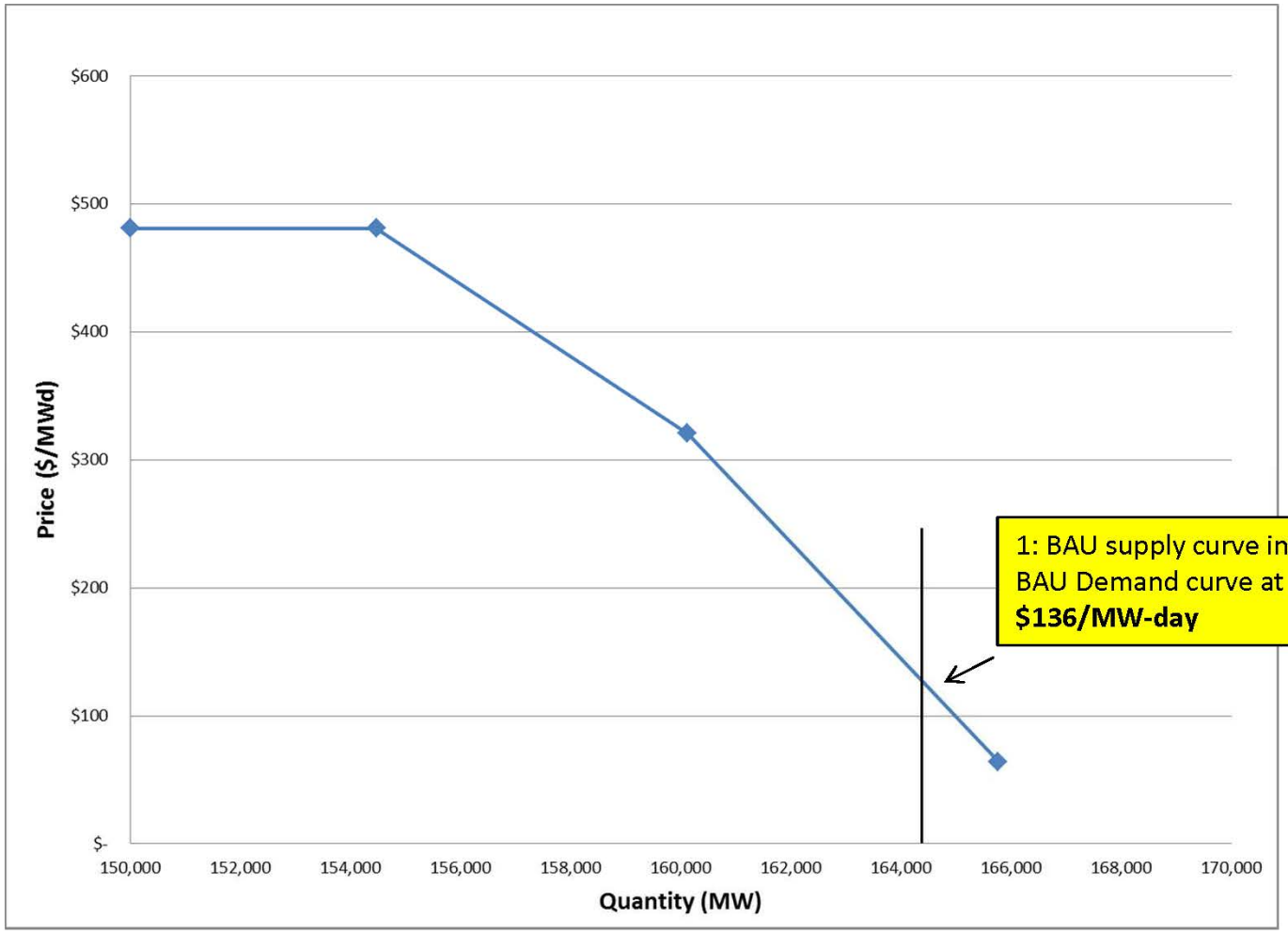
These restrictions will ultimately result in your constituents paying higher than necessary prices for electric supply service.

Conclusion

Ohio's existing EERS policy and ratemaking framework is fundamentally sound. It provides the state's IOUs the opportunity to comply with the EERS and to receive a reasonable financial incentive when they do so. It also controls the retail rates your constituents pay for their electricity. If SB58 is passed as written, it will increase the energy efficiency performance incentives IOUs receive to one of the highest, if not the highest, levels in the country. At the same time, it would limit the extent to which IOUs are expected to monetize EERS demand reduction, and suppress wholesale prices for electric capacity. These changes will ultimately lead to your constituents paying higher, and unreasonable, prices for their electricity.

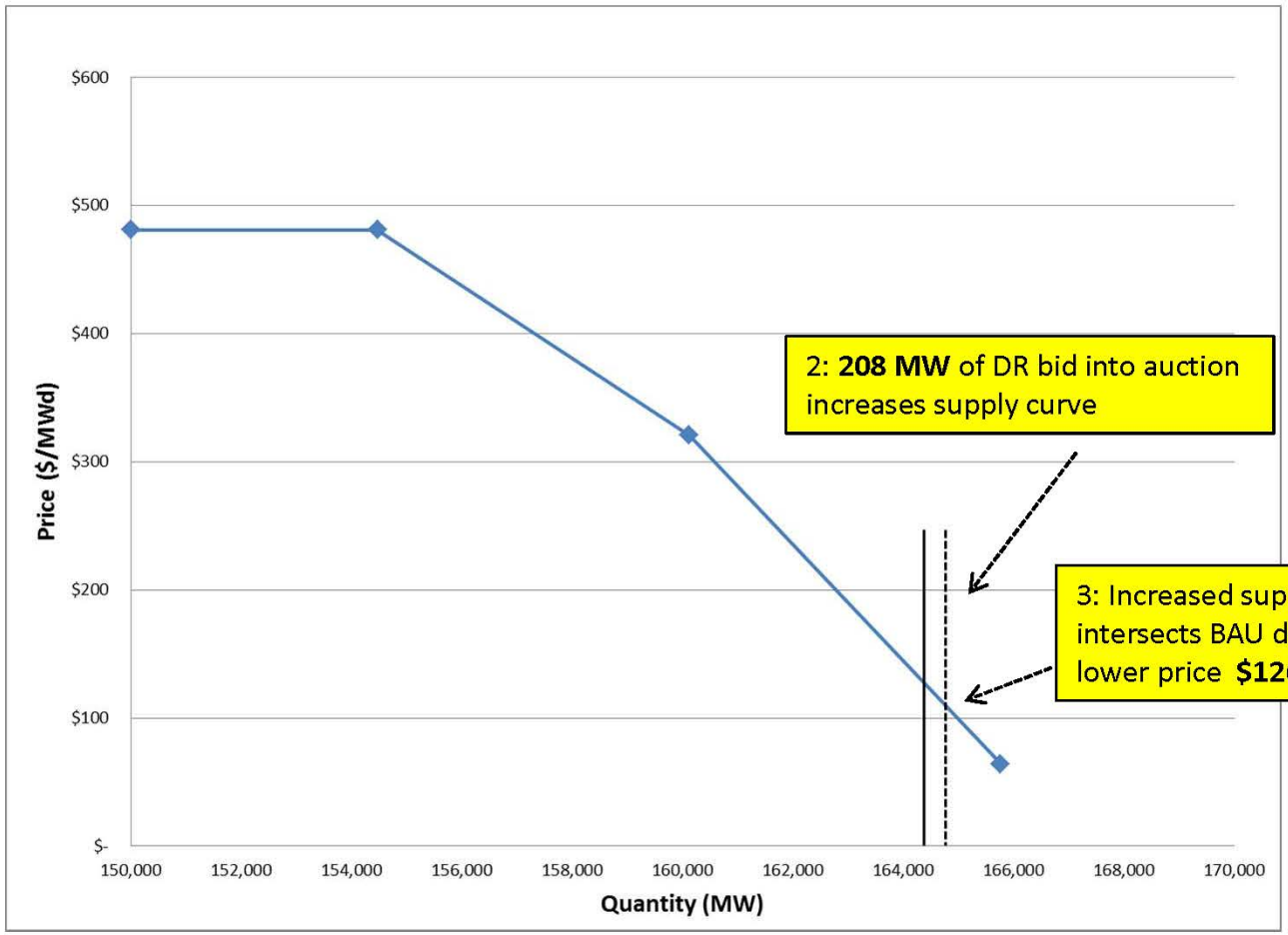
Wholesale Capacity Price Mitigation

Step 1 – Business as Usual (BAU) Demand; BAU Supply; BAU Price



Wholesale Capacity Price Mitigation

Step 2 – BAU Demand; Increased Supply; Lower Price



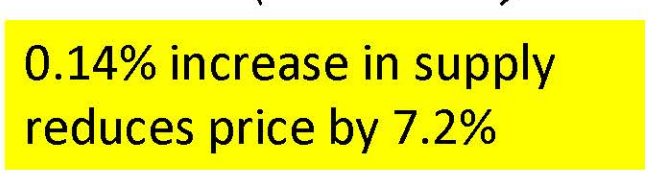
BAU Supply Curve

BAU Demand Curve ("VRR Curve")

Wholesale Capacity Price Mitigation (annual)

Ohio fraction of PJM RTO excluding ATSI

Scenario	Capacity (MW)	Price ($/MW-day)	Cost (million $)
BAU	14,439	$136	$716.7
BAU + EE	14,459	$126.2	$ 666
Change	20 **	(9.8)	($ 50.7)
	0.14%	**(7.2%)**	**(7.1)%**



**20 MW is Ohio fraction of 208 MW bid into PJM RTO

Estimates of Price Suppression in Wholesale Electricity Markets

	Date	Region	Resource	Citation
Ohio PUC	2013	Ohio	Renewable energy	OH PUC, 2013.
Lawrence Berkely National Laboratory	2013	MA	Energy Efficiency	LBNL, 2013
Baltimore Gas & Electric + Potomac Electric Power Company	2012	MD	Energy efficiency and Demand response	BGE & PEPCO, 2012
New England Independent System Operator	2012	New England	Energy Efficiency	ISO-NE, 2012
Frank A. Felder, Ph.D. Director, Center for Energy, Economic & Environmental Policy, Rutgers University	2011	various	various	Felder, 2011.
National Association of Regulatory Utility Commissioners	2011	VT	Renewable energy	NARUC, 2011
Black & Veatch	2010	PA	Energy Efficiency/ renewable energy	Black & Veatch, 2010
Charles River Associates	2010	ISO-NE	Cape Wind project	Charles River Associates, 2010
Levitan Associates Inc.	2010	RI	Wind	RIEDC, 2010
PJM	2009	PJM	Wind	PJM, 2009
Lawrence Berkely National Laboratory	2009	various	Renewable energy	LBNL, 2009
Tudor Pickering Holt & Co	2009	ERCOT	Wind	Tudor Pickering Holt & Co., 2009
KEMA Inc	2009	NYISO	Renewable energy	NYSERDA, 2009a
Summit Blue Consulting	2009	NYISO	Energy Efficiency/ renewable energy	NYSERDA, 2009b
The Brattle Group	2007	PJM	Demand response	Brattle Group, 2007
Christensen Associates Energy Consulting	2007	various	Renewable energy	Christensen Associates, 2007

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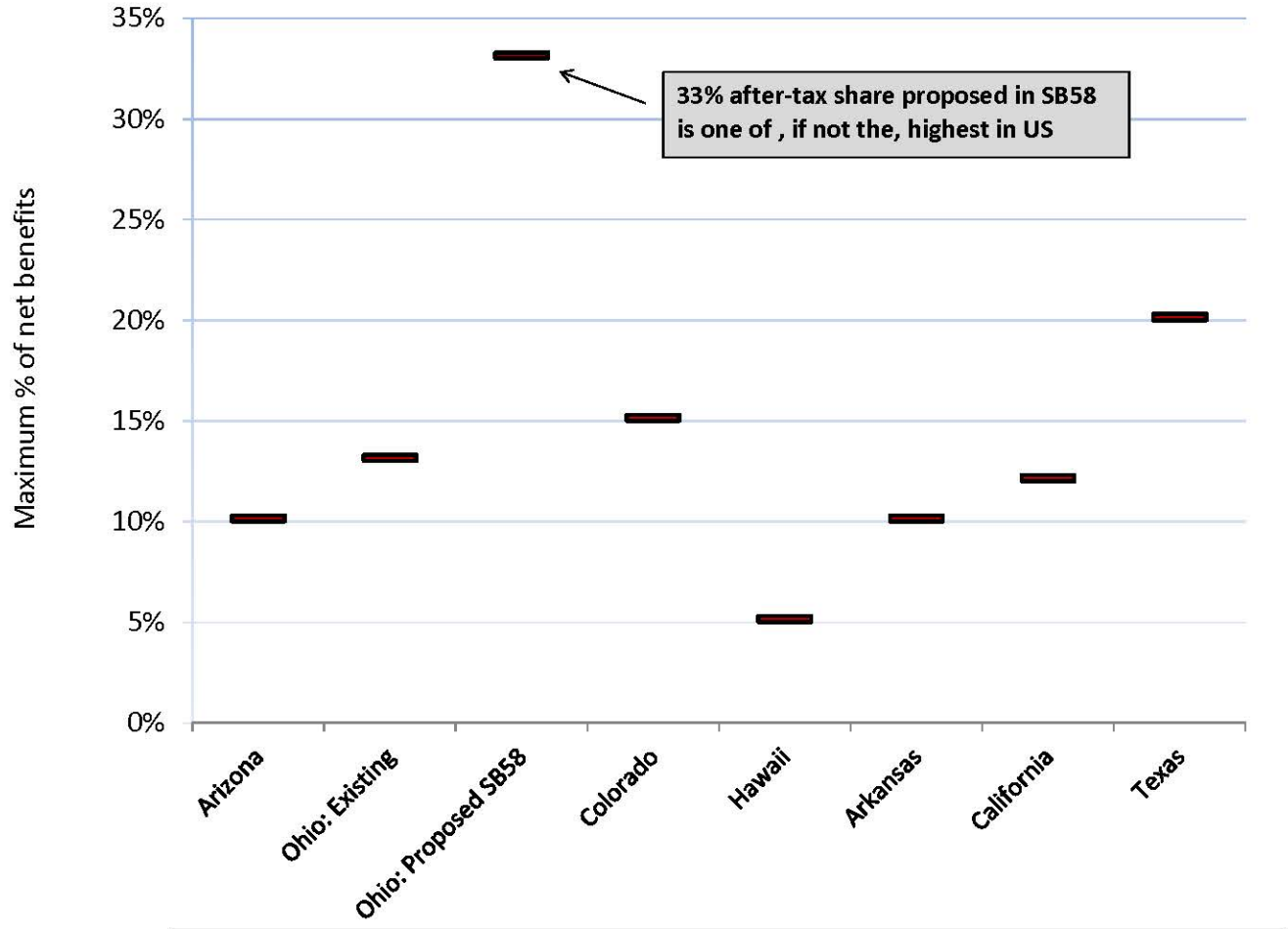
Maximum Percent of Net Benefits* Available to Utilities under Shared Savings Performance Incentives in States with Explicit State-Wide Energy Reduction Targets



States plotted from left in order of energy reduction targets - Highest to Lowest

* Note - Calculation of Net Benefits Varies by State - See Page 2 of Exhibit

States with Utility Energy Efficiency (EE) Performance Incentives Tied to Net Benefits - Examples of Policy and Ratemaking Frameworks

State	Annual Target for Reductions from Energy Efficiency	Recovery of EE Program Costs	Mechanism(s) to Minimize Erosion of utility earnings Due to lower Throughput	Utility EE Performance Incentive features						Sources
				Threshold Performance to Receive Incentive	Penalty for failure to achieve threshold	Lowest level of incentive @% of annual target	Incentive at 100% of annual target	Highest level of incentive @% of annual target	Cap	
	a	b	c	d	e	f	g	h	i	
Arizona	2.50%	Yes	Lost revenue adjustment mechanism (LRAM)	Minimum annual expenditure on EE programs	None	10%	100%	10%	10% of program costs	1, 7
Ohio: Existing	2.00%	Yes	Decoupling or LRAM	100% of annual target	None	5% @ 100%	5%	13% at 115%	Yes, $ amount varies by Utility	2
Ohio: Proposed SB58	*2.00%*	Yes	Decoupling or LRAM	*NONE*	*NONE*	*33% at 1%*	*33%*	*33%*	*None*	3
Colorado (a)	1.66%	Yes	#N/A	80% of annual target	None	1%	5%	15%	20% of program costs or $30 million; total for performance incentive and disincentive credit (a)	4, 5, 7
Hawaii	1.40%	Yes	Decoupling	100% of annual target	None	1%	1%	5%	5% of net benefits; $4 million	1, 7
Arkansas	0.90%	Yes	LRAM	80% of annual target	None	10%	10%	10%	8% of program budget at 120% of annual target	5, 6
California	0.85%	Yes	Decoupling	85% of annual target	Penalty if savings less than 65% of goal	-12%	9%	12%	$150 million per year for award and penalty	1, 7
Texas (b, c, d)	0.40%	Yes	#N/A	102% of annual target	None	1% @ 102%	0%	20%	20% of program costs	1, 8
Georgia €	n/a	Yes	#N/A	None	None	3%	10%	10%	None	1, 4, 5
Kentucky (Duke, AEP) f	n/a	Yes	LRAM	100% of annual target	None	10% @ 100%	10%	10%	10% of program costs	1

Sources

1 ACEEE 2011. Carrots for Utilities: Providing Financial Returns for Utility Investments in Energy Efficiency, January 2012 available at http://aceee.org/sector/state-policy
2 PUCO Orders in Cases 11-5568-EL-POR (AEP), 11-4393-EL-RDR (Duke), and 12-2190-EL-POR (FirstEnergy), and proposed Stipulation and Recommendation in Case No. 13-0833-EL-POR (DP&L).
3 SB58
4 ACEEE data base. "State Energy Efficiency Policy", available at http://aceee.org/sector/state-policy
5 IEE 2013. State Electric Efficiency Regulatory Frameworks, July 2013 available at http://www.edisonfoundation.net/iee/Documents/IEE_StateRegulatoryFrame_0713.pdf.
6 AR PSC 2013. Docket Nos. 13-002-U. Order No. 7, page 29
7 ACEEE 2013. State Energy Efficiency Resource Standards: EERS Approaches by State (as of July 2013), available at http://aceee.org/policy-brief/state-energy-efficiency-resource-standard-activity.
8 Public Utility Commission of Texas Electric Substantive Rules, §25.181(e)(1)

Notes

a incentive data is for Public Service of Colorado (PSC). Disincentive credit is comparable to lost revenue adjustment
b A utility that meets at least 120% of its demand reduction goal with at least 10% of its savings from hard-to-reach programs receives an additional 10% bonus.
c Energy efficiency includes measures that reduce electric energy consumption, peak demand, or both. The 0.4% savings target is measured against summer peak demand.
d Utility must achive ≥30% reduction in R & C annual demand growth in 2013.
e Incentives are based on projected program kWh savings.
f A 2008 statewide plan proposes energy efficiency to offset at least 18% of projected demand in 2025, per ACEEE data base (source 4)