STATE OF NEW JERSEY
Board of Public Utilities

IN THE MATTER OF THE BOARD'S INVESTIGATION OF CAPACITY PROCUREMENT AND TRANSMISSION PLANNING	)))))	DOCKET NO. EO11050309

Testimony of

Susan F. Tierney, Ph.D.

On behalf of

The COMPETE Coalition

October 14, 2011

President Solomon, and Commissioners Asselta, Fiordaliso and Fox.

My name is Susan Tierney. I am a Managing Principal at Analysis Group, an economics consulting firm headquartered in Boston. I specialize on electricity and gas industry issues, and tend to focus on issues at the intersection of economics, regulation and markets.[1]

I am testifying on behalf of the COMPETE Coalition ("COMPETE"). COMPETE is an organization of almost 600 electricity stakeholders, including customers, suppliers, generators, transmission owners, trade associations, environmental organizations and economic development corporations, all of whom support well-structured competitive electricity markets for the benefit of consumers. COMPETE favors market solutions and choice as the best way to sustain competitive energy prices for consumers.

In this docket, the Board has been examining a number of issues surrounding sources of supply that serve electricity consumers in New Jersey. President Solomon's notice of hearing has asked a number of questions aimed at examining the performance of the wholesale markets that serve New Jersey. As the Board assesses these issues, I encourage you to be mindful of the positive elements of today's competitive market structure so that actions you might seek to take do not undermine some attributes of the market that benefit New Jersey consumers.

One of the most important of these elements is New Jersey's positive track record in pursuing efficient energy solutions. This outcome stems from several factors.

First, New Jersey has been one of the leaders in supporting energy efficiency, and consumers will benefit from steps you take to strengthen it and by avoiding actions that would inadvertently undermine energy efficiency outcomes. The State's efforts include utility-sponsored energy efficiency programs and state policies regarding appliance efficiency codes and building standards. (Figure 1 shows the ratings of states in terms

[1] My background includes 15 years in Massachusetts state government, where I served as a public utility commissioner and Secretary of Environmental Affairs, and in the federal government as Assistant Secretary for Policy at the U.S. Department of Energy. My consulting practice has included a wide variety of clients, including state government agencies, the National Association of Regulatory Utility Commissioners, attorney generals, large electricity and gas customers, regional transmission organizations, electric generators, transmission companies, distribution utilities, foundations, Indian tribes, environmental organizations, and many others.

of their 2010 performance on energy efficiency policies and programs, as characterized by the American Council for an Energy Efficient Economy.)

For policy makers in states, like New Jersey, with a restructured electric industry, energy efficiency is an area of energy policy where the state can have a powerful and direct effect. State policies have helped overcome significant and persistent market barriers to energy consumers' adoption of energy efficiency. This in turn helps them lower their energy use, manage their electricity bills, and help keep their states' economies more resilient if energy prices rise.

Second, **these energy efficiency policies and programs are working**. When one focuses on how much customers are paying for electricity in New Jersey, rather than what the price of electricity is in the state, New Jersey is doing a better job than the conventional wisdom would suggest. Importantly, the price of electricity is only part of the story, and tends to mischaracterize the cost of power for real consumers. What really matters is the total energy bill paid by the customer.

The relatively high electricity prices in states like New Jersey mask the fact that those states' economies are using electricity relatively efficiently. This can be seen in Figure 2, which compares the states in terms of their relative reliance on electricity to produce economic activity. New Jersey's economy uses low amounts of power to produce economic output, just behind a number of states that, like New Jersey, have relatively high electricity rates. This means that New Jersey gets more economic bang for its electricity buck.

Figure 3 shows this point from a different angle. When you take into account the fact that the average residential customer in New Jersey uses much less electricity than his or her counterparts in other states, the New Jersey customer actually has a lower annual electricity bill than an average residential customers in some states with much lower electricity rates. Take, for example, the residential customer in Tennessee or North Carolina or Alabama, with much lower electricity rates: they pay higher electricity bills on average than does the average household in New Jersey.

I mention this point to the Board as a reminder of the importance of the powerful tool of energy efficiency, which is one of those policies where states can make a difference. As shown in Figure 1, New Jersey has already done a lot in this policy area. And it would be a shame to miss the opportunities to do even more.

Third, the wholesale competitive markets that serve New Jersey are doing a good job in fostering an environment that values efficient use – and supply – of electricity

resources. PJM's markets are providing sufficient, diverse and efficient energy resources, including demand-side resources. Many others in this proceeding have already highlighted the fact that reserve margins remain strong, with energy and capacity markets having brought forward new resources in recent years at an average cost lower than the cost to build new generating capacity.

I highlight here, in particular, the information provided to the Board by PJM in June, 2011, which indicates, among other things, that 708 MW of new generating capacity has been installed in New Jersey since 2007, with more coming forward for delivery in upcoming years:

> Since the implementation of RPM for the 2007/2008 Delivery Year, a minimum of 42,173 MW of incremental capacity was made available or offered into the 2014/2015 Base Residual Auction across the PJM region ...Of that, 9,189.5 MW was made available in the Eastern MAAC region of PJM, which includes 5,564.9 MW of additional capacity made available in New Jersey as shown in Table 2. This incremental, new capacity made available to PJM through RPM includes new generation capacity resources, capacity upgrades to existing capacity resources, new Demand Resources, upgrades to existing Demand Response resources, and new Energy Efficiency resources. [2]

In Figure 4, I have reproduced Table 2 from the PJM quote above, along with another table (Table 5) from the same document, which shows the amount of installed capacity already added in the different PJM states from 2007-2011. According to PJM, on average, this capacity has been obtained at an average price below the cost to build new generation in New Jersey.[3]

Since 2007, the PJM-administered markets have excelled in bringing forth cost-effective energy-efficiency and demand-response resources. These resources have helped to keep capacity costs lower than they would otherwise be in the absence of these resources. Figure 5 shows the increasing amounts of PJM load-management in New Jersey from 1999 through 2010, and shows with the clear uptick that occurred after 2007. Figure 6 shows the track record of PJM load-management resources in various regions (including a total of 1,652 MW clearing the market in New Jersey, in the constrained areas of several zones (Atlantic Electric ("AECO"), Jersey Central Power & Light

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[2] Comments of PJM Interconnections, L.L.C. in Docket No. EO-11050309 (the New Jersey Board of Public Utility's Investigation of Capacity Procurement Transmission Planning), dated June 17, 2011, page 14.

[3] Comments of PJM Interconnections, L.L.C. in Docket No. EO-11050309 (the New Jersey Board of Public Utility's Investigation of Capacity Procurement Transmission Planning), dated June 17, 2011, page 14.

("JCPL"), Public Service Gas & Electric ("PSEG"), and Rockland Electric ("RECO")) in the state.

These demand-side resources, combined with those resulting from policies supported within the State, make a difference in lowering the cost of electricity in the state. For example, this summer, PJM dispatched thousands of megawatts of demand-response to help meet high demand; had those resources not been available to PJM, the region would have needed more (and relatively more expensive) power plants to do that job.

The most recent PJM capacity auction for 2014/2015 (with results shown in Figures 7 and 9) brought forward even more demand-side resources for the future, and indicates a robust response of generation, energy efficiency and demand-response from the competitive market.

In contrast, policies that subsidize conventional generation will distort the market, and undermine price signals for investments in demand response and energy efficiency. I know that COMPETE strongly opposes these subsidies and non-bypassable charges for generation service because it limits customers' abilities to choose and manage their energy solutions. The result will be increased energy usage in New Jersey and increased charges and total bills to customers.

Finally, I want to highlight one more point that is important for understanding the context of electricity prices in New Jersey and the outlook ahead. Clearly, **New Jersey's electricity prices reflect the relatively clean electricity mix of generation available to New Jersey.** These prices that reflect a variety of factors – including land availability and cost, taxes, labor cost, and, most notably, the mix o€f resources that produce electricity for consumers in the state. States with relatively low electricity prices are predominantly those in regions with a high amount of power produced from coal plants (some of which have not yet made investments in air pollution control equipment of the sort that already exists at New Jersey power plants). (Figure 9 compares states in terms of their reliance on coal, and their average price of electricity.)

I highlight this fact about the generation mix of a state, because it explains so much about why New Jersey consumers pay higher electricity costs, relative to certain other states.[4] I also mention it because it is hard for a state to change its electricity mix very

[4] I have examined this issue in prior studies for example, S. Tierney, "Decoding Developments in Today's Electric Industry — Ten Points in the Prism," prepared at the request of the Electric Power Supply Association, October 2007; S. Tierney *et. al.*, "Fuel Diversity in the New York Electricity Market," prepared at the request of the New York ISO, September 2008.

fast. New Jersey relies on coal for 8 percent of its electricity production. The fleet of generation assets located in New Jersey reflects New Jersey policymakers' many and successful efforts to impose environmental controls on power plants located within the boundaries of New Jersey, and to encourage production of power with lower emissions through use of natural gas and nuclear power. In fact, the coal-based fleet of generators located in New Jersey is among the cleanest in the country. This reflects stronger requirements imposed historically on power plants located in the states along the DC-to-Boston corridor relative to those plants in upwind states (until about now, as the upcoming Cross-State Air Pollution Rule and the proposed Utility Air Toxics will affect uncontrolled and under-controlled coal-fired power plants in upwind states in future years). To the extent that these regulations are implemented in a timely fashion, the price differences that exist today between unscrubbed coal and cleaner generation will lessen.[5] Given these facts, it would be a mistake to conclude that relatively higher prices are a sign that competitive markets are not working as intended.

In conclusion, I appreciate the opportunity to provide the Board with context for the important decisions it will make in this proceeding. The market is strong and contributes significantly to the state's goals for reliable, efficient and clean energy supply. Market solutions and competition are the best way to deliver sustainable value to customers.

[5] In fact, even before those air regulations take effect, electricity prices in the states with more reliance on coal have already risen more in recent years compared to states (like New Jersey) with less use of coal. This is shown in Figure 10, which displays each state's percentage reliance on coal and its change in electricity prices from 2007 to the present, as well as the rate of inflation over the same period. States, like New Jersey, with little coal (and more gas) have experienced price increases that are lower than inflation, and states with more coal reliance have experienced price increases higher than inflation. This is not surprisingly to me, in light of the fact that coal prices to electric generators have increased by around 35 percent since the start of 2006, and natural gas prices have dropped by approximately 50 percent over the same period (with much sharper decreases since early 2008, when natural gas prices were at their peak since 2006). Therefore, we can expect to see a reduction in power price differentials between New Jersey and states with a heavier coal reliance in the future.

CHEMISTRY COUNCIL OF NEW JERSEY **Statement**

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CHEMISTRY COUNCIL OF NEW JERSEY'S TESTIMONY IN THE MATTER OF THE NEW JERSEY BOARD OF PUBLIC UTILITIES' INVESTIGATION OF CAPACITY PROCUREMENT AND TRANSMISSION PLANNING

Friday, October 14, 2011 | Hal Bozarth, Executive Director, Chemistry Council of New Jersey

Good afternoon President Solomon and commissioners.

My name is Hal Bozarth, and I am the executive director of the Chemistry Council of New Jersey (CCNJ).

The CCNJ is the premier trade association representing more than 75 manufacturers in the business of chemistry. Our membership consists of large and small companies that are part of New Jersey's chemical, pharmaceutical, consumer packages goods, petroleum refining, flavors and fragrances, and precious metals industries. Collectively the business of chemistry represents 22 percent of the manufacturing workforce in New Jersey, about 55,000 people. But for every one of these jobs, an additional 5.2 jobs are created within the state's economy.

I want to commend you, President Solomon, and members of the Board, for continuing to address an issue important to my members, New Jersey's extremely high energy costs.

I am pleased to have this opportunity to share with you the Chemistry Council of New Jersey's perspective on capacity procurement and transmission planning and to expand upon our original comments submitted to the Board on June 16, 2011.

The subject of this hearing is extremely important to the CCNJ, because the business of chemistry in New Jersey continues to be negatively impacted by the high cost of electricity in our state. Recent numbers from the US Energy Information Administration indicate industrial electricity rates in New Jersey are now the 6th highest in the nation, 70 percent above the national average. New Jersey's high electricity rates, coupled with 21-26% in added surcharges on ratepayer bills, continue to put our members at a competitive disadvantage.

For some energy-intensive products, energy for both fuel and power needs and feedstocks account for up to 85% of total production costs. Because energy is a vital component of the industry's cost structure, higher energy prices can have a substantial negative impact.

The members of the Chemistry Council of New Jersey can no longer afford the high energy rates in this state. New efficient energy generation and an upgraded power grid can help increase reliability, enhance energy competition and ultimately drive down electricity rates. A reliable flow of electricity is critically important. If that reliability is threatened, businesses will suffer and investors are likely to flee the region for safer havens.

This is why, the business of chemistry, an energy intensive industry, needs access to cheap and reliable electricity, and why the Chemistry Council of New Jersey continues to support new base-load generation in the state and an upgrade to the state's transmission infrastructure.

Currently, a private generator of power is paid for the electricity it produces not on the basis of its actual costs (as under the old days of regulation), but on the price awarded to the costliest, marginal electricity generation needed to meet the demands of the entire energy system. For example, in today's energy market, nuclear power is 'cheap' to generate but commands the same extremely high prices paid for power produced by other conventional power plants because that very expensive power is still needed to meet the entire system's needs some of the time. This so-called "market pricing" of electricity serves as a disincentive for energy

corporations to develop new, efficient sources of power. These monopolies simply do not want to displace the older, inefficient plants that support high prices and their high profit margins.

High costs are also being driven by fundamental flaws in our region's energy and capacity markets. These markets are dominated by a handful of companies that own most of the plants that generate our electricity. Companies with monopoly power, like PSEG, which controls 90% of the generation facilities in the state's industrial corridor that is the PSEG zone, have a financial incentive to tighten our supply of electricity to keep prices high. To make matters worse, some electricity generators now export scarce New Jersey-based power to more lucrative markets outside the state.

A tighter supply of electricity benefits those power monopolies which control most of the power plants. It is clear that the state must take bold steps on behalf of all energy consumers.

CCNJ continues to strongly support the Long-Term Capacity Agreement Pilot Program (LCAPP) established by S-2381, signed into law by Governor Christie.

LCAPP is addressing the failure of the PJM reliability pricing model (RPM) to incentivize new electricity generation in the state. Every year, ratepayers pay up to $1.4 billion in RPM surcharges and have seen no return on the investment. The program has failed, and New Jersey has been forced to act on its own to help bring new generation to the state, while increasing reliability and decreasing congestion.

Opponents of LCAPP have said that it will "turn back the clock on years of efforts to open electrical power markets to more competition;" if this is the case, why has no new base load generation been built in New Jersey in decades, and why does New Jersey still have some of the highest electricity rates in the nation?

Part of the problem lies in the transmission interconnection process. PJM's own rules and policies are preventing objective interconnection studies from being conducted. Currently, such studies are not even conducted by PJM. Instead, interconnection studies are conducted by transmission-owning entities – many of which are part of energy monopolies that own generation in the PJM markets. It is in the interest of energy monopolies to conclude that no new capacity is needed so they can continue to strangle New Jersey ratepayers with the highest electricity rates in the nation.

In my opinion, it is not appropriate for transmission-owning entities to perform interconnection studies. By its very nature, their findings whether right or wrong may be suspect of bias. And given the fact that new generation capacity has been disproportionately built outside of Locational Deliverability Areas with higher capacity prices, like New Jersey, I would say that their findings are biased. This is why the Chemistry Council of New Jersey supports the transfer of the responsibility for these studies from the monopoly holding companies that own both generation and transmission to a third party entity. These studies need an unbiased assessment.

If getting PJM to agree to a third party assessment is not successful, I strongly suggest that the Board investigate the abuse of structural market power by existing monopolies and the resulting perpetuation of high energy costs across the state. In particular, the conduct of interconnection studies by transmission affiliates should be investigated by the Board to determine whether those activities are designed to improperly benefit their sister generation affiliates.

The other part of the problem is the failure of the Federal Energy Regulatory Commission to deal with the evident problem that RPM is not delivering new capacity to NJ. Instead of trying to resolve that problem, the FERC is acting to restrict the state's new power plant options, in particular the state's LCAPP program. If the FERC's recent Order is left unchanged it would probably kill the state's LCAPP and the nearly 2,000 megawatts of new capacity that the program has acquired. I am happy to see the Board actively appealing the FERC decision and working through the reconsideration process. The CCNJ supports the Board's efforts in that continuing proceeding in Washington.

The FERC should reverse its Order and allow NJ's LCAPP to proceed unobstructed. But if it does not, then the BPU should pursue all available alternatives that would get needed new capacity built.

The Board has proposed to the FERC an alternative idea should it decide to not reverse its decision. That idea involves a new auction that would have new generation compete with existing generation, with one very important condition. Instead of the usual auction that awards long term contracts on the basis of price alone, the Board proposes to address the endemic problem of market power in awarding capacity contracts. This new auction would incentivize long term generation into the mix with a weighting based on their price offer **and** the extent that they reduce market concentration, ensuring that pricing is no longer dictated by older, inefficient plants. Such an auction will diminish the structural market power of the existing energy monopolies. A time-limited, incentivized auction will provide an opportunity for additional generators to enter the market and, in turn, decrease energy and capacity costs for all ratepayers. CCNJ supports the Board's alternative to the LCAPP. And we would hope that the FERC and PJM would support it as well rather than continue to dodge the issue of structural market power.

However, if the Board is prevented from implementing this new auction as well by the FERC, then perhaps it is time for the Board to give further consideration to a state power authority through current PJM rules.

PJM rules allow for a Fixed Resource Requirement (FRR) alternative that would permit opting out of RPM altogether. Pursuing an FRR alternative through a state power authority is a legitimate alternative available to the state. It is an alternative that would avoid the FERC and PJM interference that is currently hampering state efforts to develop new capacity.

A power authority is not a new idea. New York State's Public Power Authority has for decades served to increase reliability and spur economic development through the generation and sale of low cost power.

In proposing a power authority, the Board would join other forward thinking states that recognize the need to seize control of its energy destiny to benefit citizens and spur economic development through lower rates.

President Solomon and commissioners, it is evident to me that FERC's policies and PJM's interconnection rules and practices have failed the electricity ratepayers of New Jersey, held hostage by the monopoly generators in the state. It is time that New Jersey take back control of its energy destiny and does all in its power to increase energy generation capacity and remove the obstacles keeping it from acting, even if this means the establishment of a public power authority.

The Council applauds the Board's efforts to do all in its power to reduce energy rates in the state. Lower energy rates benefits not only my members but all ratepayers within the state.

Thank you.

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The Chemistry Council of New Jersey (CCNJ), founded in 1955, is the premier trade and advocacy organization representing the interests of about 75 New Jersey manufacturers in the business of chemistry. Our membership consists of large and small companies that are part of New Jersey's chemical, pharmaceutical, consumer packages goods, petroleum refining, flavor and fragrances, and precious metals industries. The CCNJ is committed to a better quality of life through science.

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Exhibits of
Susan F. Tierney, Ph.D.
Managing Principal
Analysis Group
Boston, Massachusetts

On behalf of The COMPETE Coalition

October 14, 2011

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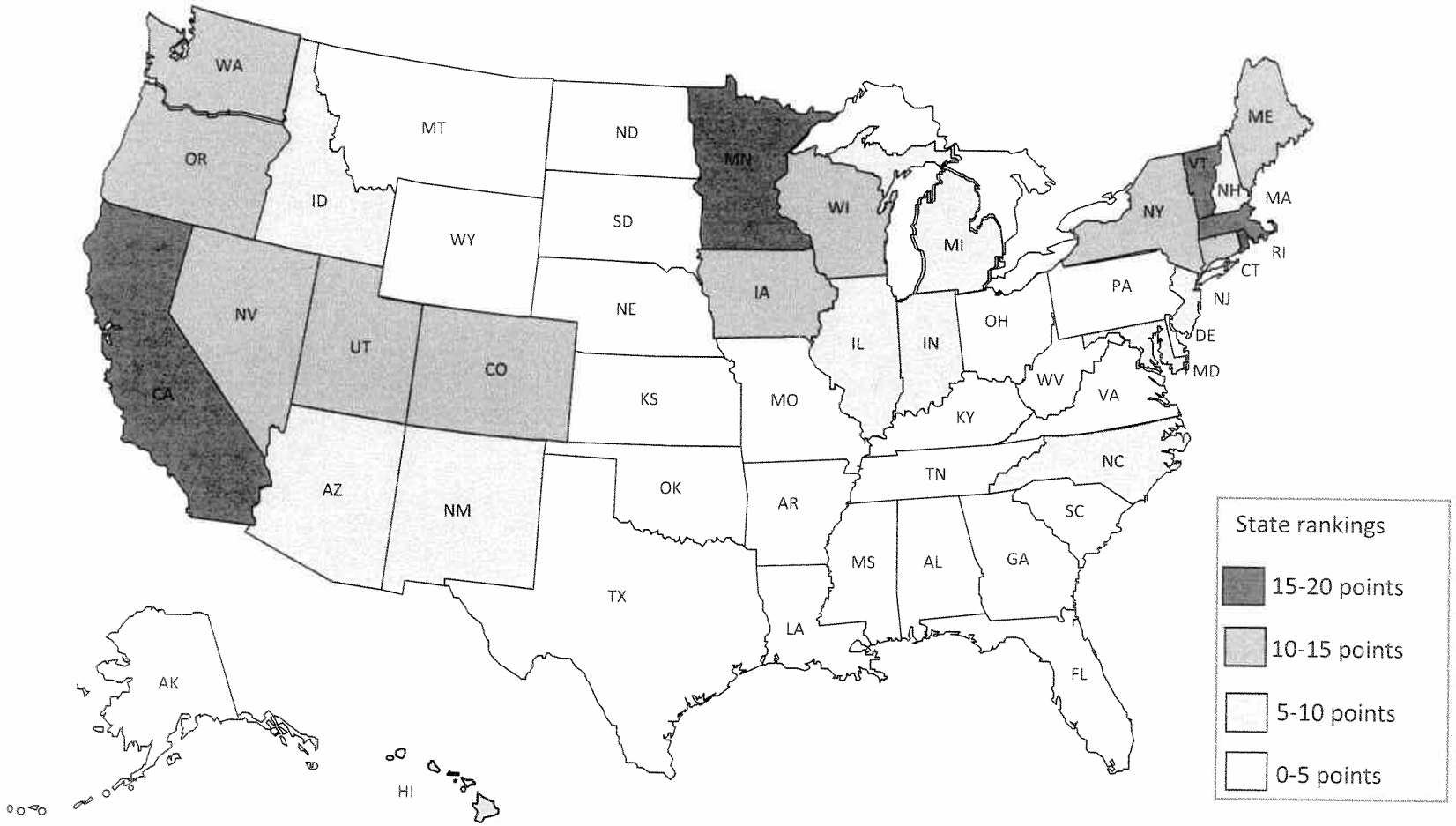
Figure 1:
States with strong demand-side management programs



ACEEE scorecard - 2010

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Figure 2:
Comparison of States:
Electricity per Dollar of Gross State Product

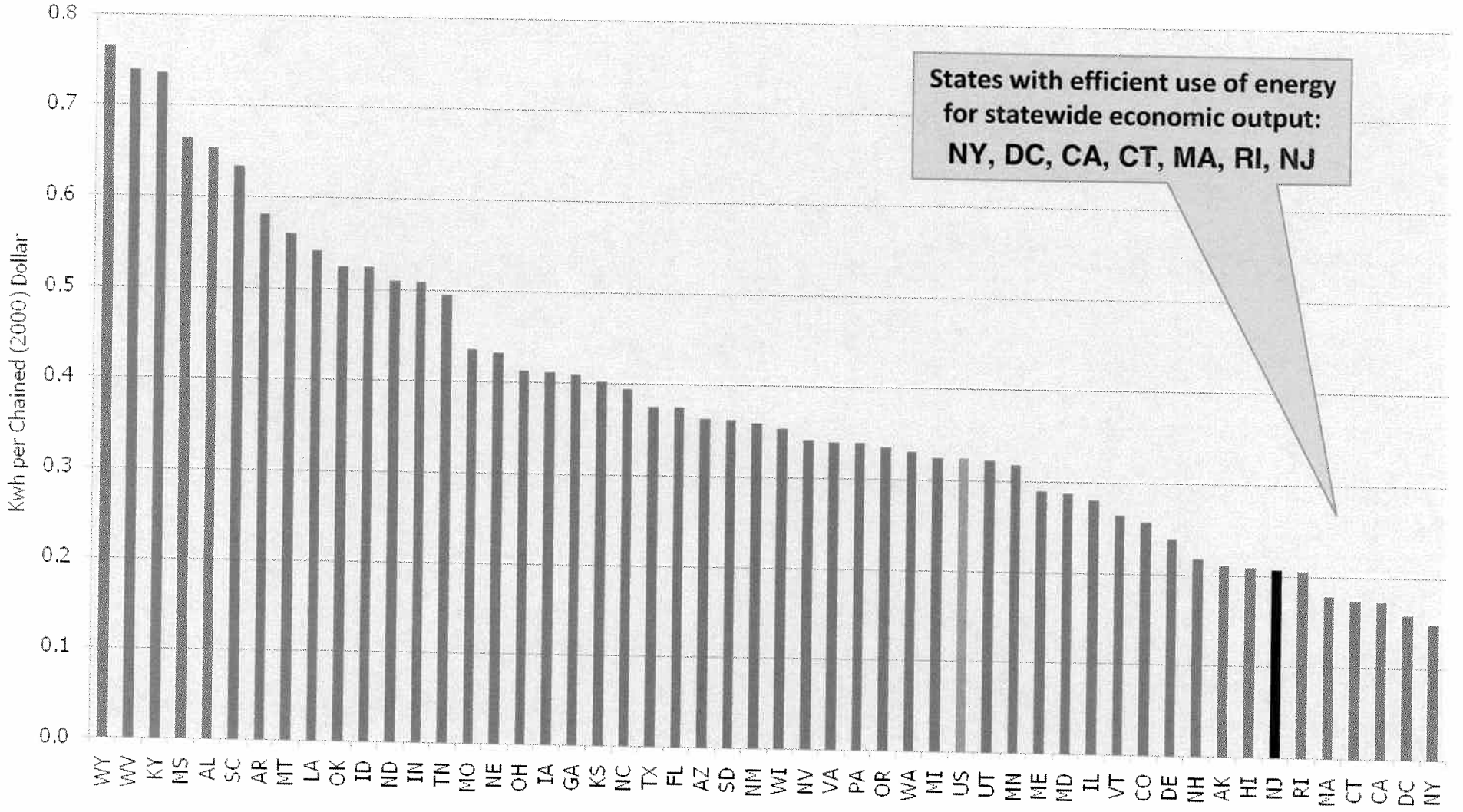

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Figure 3: Comparison of States: Average Unit Price of Electricity Versus Average Electricity Bill

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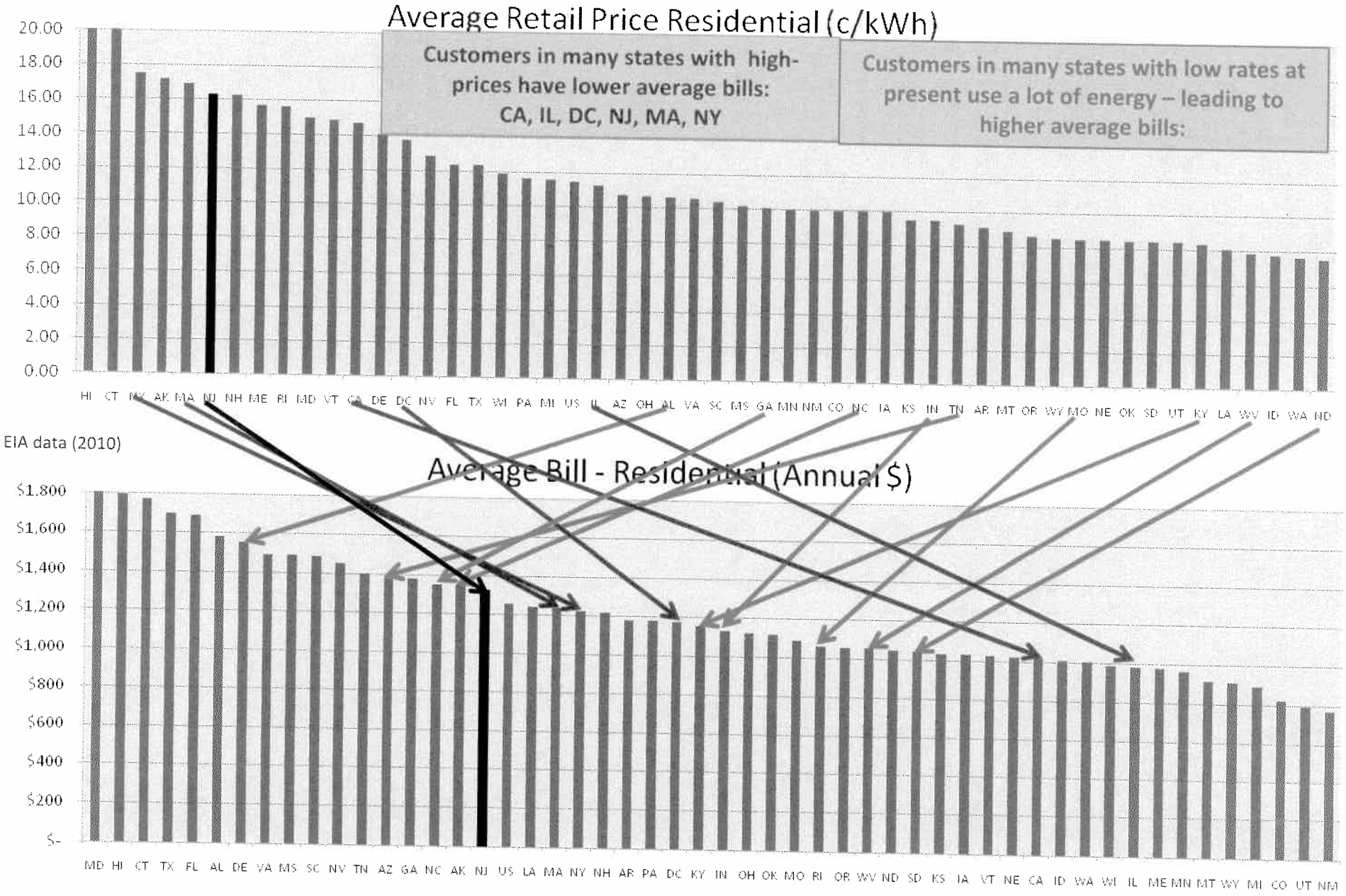


Figure 4 –
Capacity Resources in New Jersey:
Amounts Installed (2007-2011 YTD) and Obtained Through the PJM'S RPM Since 2007

Table 5: Installed Capacity by Fuel Type by State (2007 - 2011 YTD)

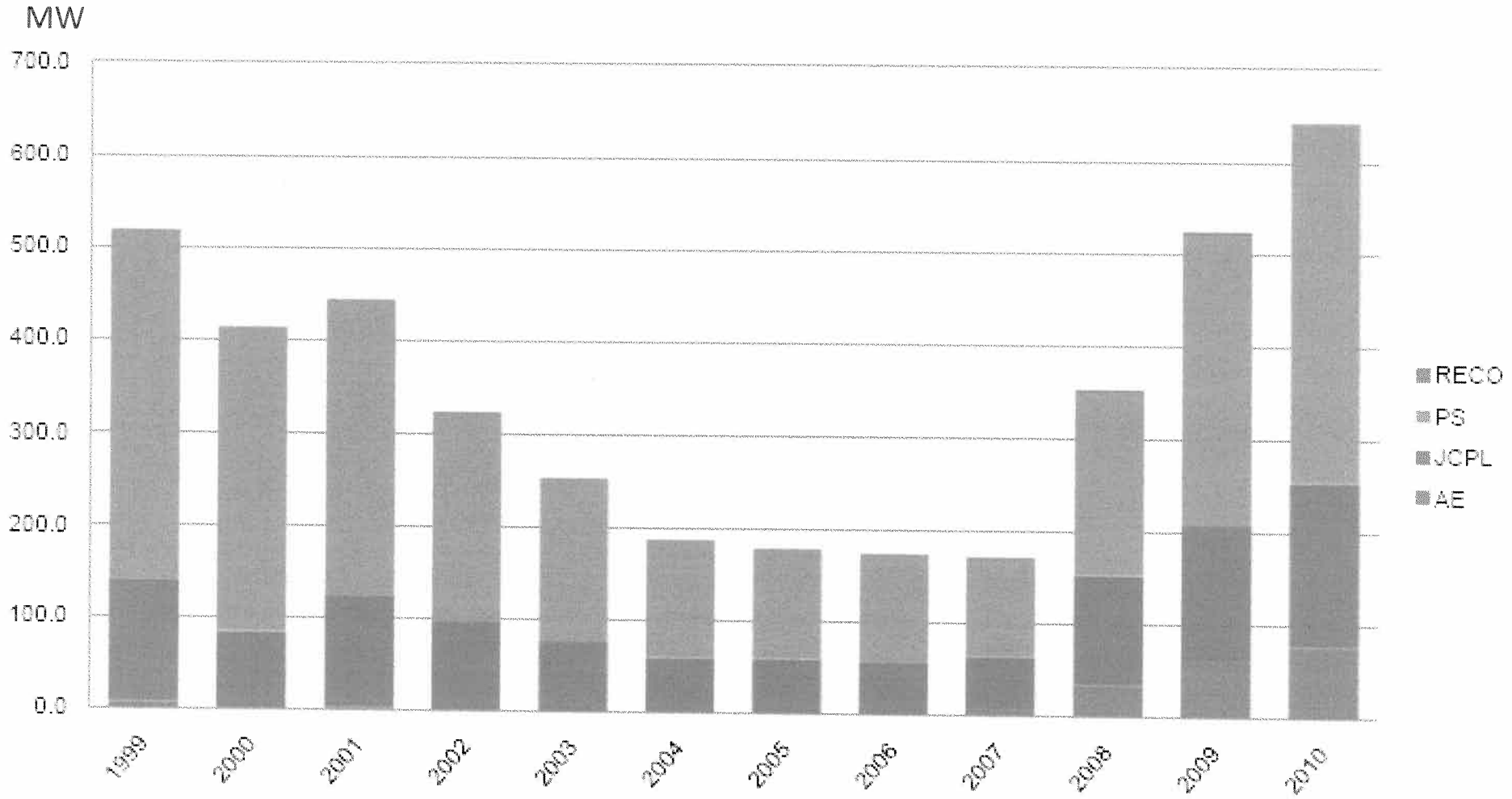
State	Biomass	Coal	Diesel	Hydro	Methane	Natural Gas	Nuclear	Oil	Other	Solar	Storage	Wind	Grand Total
DE	0.0	23.0	0.0	0.0	9.0	38.0	0.0	26.2	0.0	0.0	0.0	0.0	96.2
IL	0.0	0.0	0.0	0.0	6.4	666.0	140.0	0.0	0.0	0.0	0.0	270.0	1,082.4
IN	0.0	10.0	0.0	0.0	0.0	19.0	0.0	0.0	0.0	0.0	0.0	220.0	249.0
MD	0.0	0.0	0.0	0.0	12.0	139.7	0.0	0.0	0.0	0.0	0.0	6.5	158.2
NJ	0.0	0.0	0.0	0.0	19.2	411.4	236.0	17.0	0.0	24.4	0.0	0.0	708.0
OH	0.0	195.0	0.0	0.0	16.4	13.0	0.0	0.0	0.0	1.0	0.0	0.0	225.4
PA	31.4	60.0	8.0	156.0	30.4	828.0	308.0	0.0	20.0	1.1	0.0	108.6	1,551.5
VA	0.0	66.0	0.0	27.0	66.3	1,436.0	170.0	6.7	0.0	0.0	0.0	0.0	1,772.0
WV	0.0	746.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	97.2	843.2
KY	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0
MI	0.0	0.0	0.0	0.0	6.4	0.0	0.0	0.0	0.0	0.0	0.0		6.4
TOTAL	31.4	1,120.0	8.0	183.0	166.1	3,551.1	854.0	49.9	20.0	26.5	0.0	702.3	6,712.3

Table 2: New Capacity Resources Made Available to New Jersey in RPM Since Inception

Change in Capacity Availability	New Jersey
New Generation	534.8
Generation Upgrades (not including reactivations)	666.2
Generation Reactivation	193.7
Forward Demand and Energy Efficiency Resources	1,947.4
Cleared ICAP from Withdrawn or Canceled Retirements	2,222.8
Total Impact on Capacity Availability in 2014/2015 Delivery Year	**5,564.9**

Source: Comments of PJM Interconnections, L.L.C. in Docket No. EO-11050309 (the New Jersey Board of Public Utility's Investigation of Capacity Procurement Transmission Planning), dated June 17, 2011.

Figure 5 –
PJM Load Management in New Jersey



Source: PJM presentation (Mike Kormos, Sr. VP, Reliability Services, and Steve Herling, VP, Planning), "New Jersey Power Supply Load and Capacity Data, New Jersey Capacity Issues Technical Conference," Docket No. EO09110920, June 24, 2010

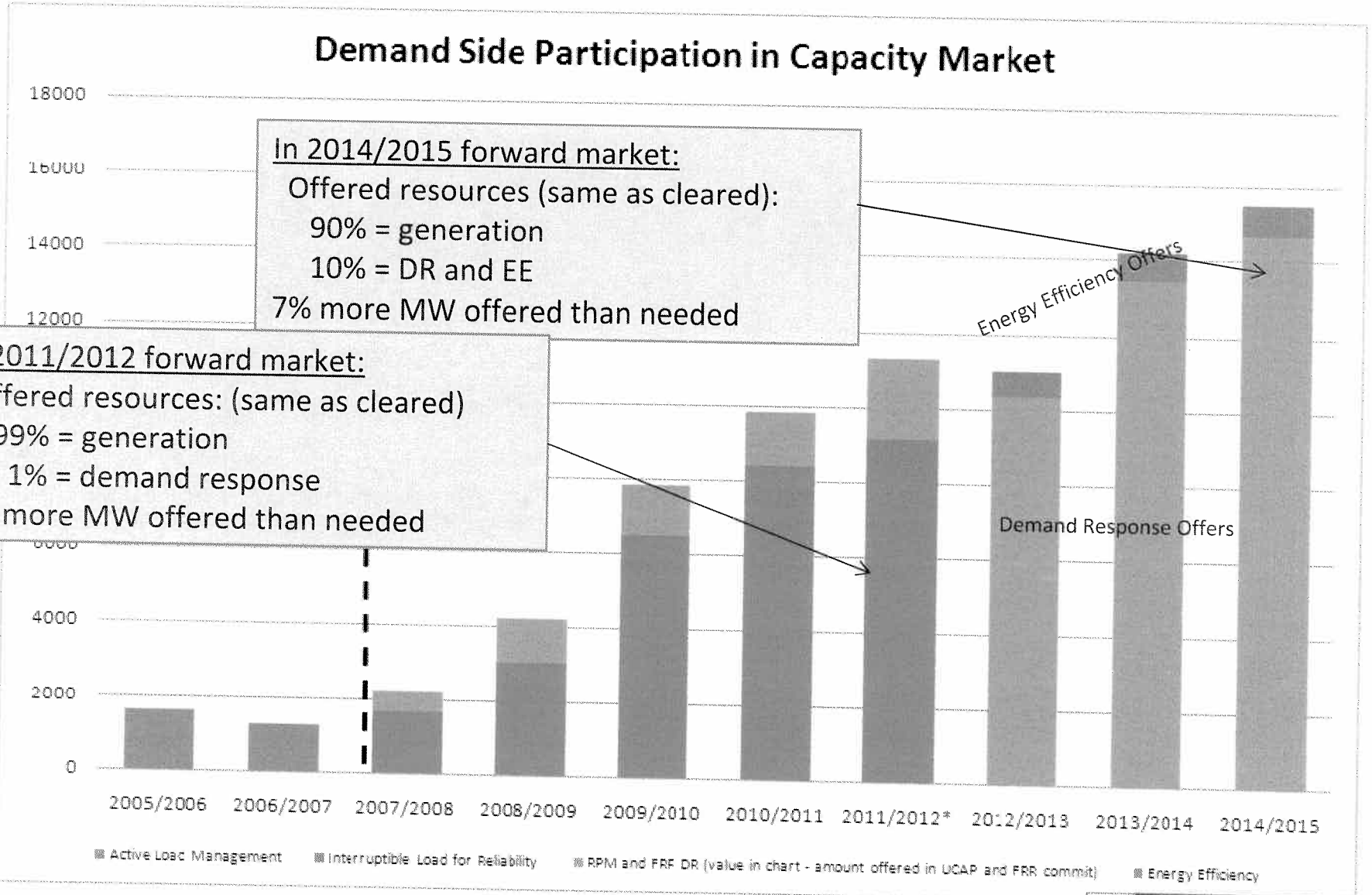
Figure 6 –
Demand-Side Resources Added Through PJM Capacity Auctions Since 2007

		Offered MW*			Cleared MW*		
Constrained LDA	Zone	Demand	EE	Total	Demand	EE	Total
EMAAC	AECO	268.2	0.7	268.9	205.4	0.7	206.1
EMAAC	DPL	470.9	7.0	477.9	391.5	6.8	398.3
EMAAC	JCPL	553.0	2.2	555.2	444.0	2.0	446.0
EMAAC	PECO	992.4	8.4	1,000.8	830.5	6.6	837.1
EMAAC	PSEG	1,140.1	6.8	1,146.9	964.2	4.8	969.0
EMAAC	RECO	42.0	-	42.0	31.2	-	31.2
EMAAC Sub Total		3,466.6	25.1	3,491.7	2,866.8	20.9	2,887.7
MAAC	PEPCO	1,022.5	43.3	1,065.8	893.1	42.9	936.0
MAAC	BGE	1,450.9	119.3	1,570.2	1,341.3	118.4	1,459.7
MAAC	METED	469.9	4.2	474.1	398.4	4.1	402.5
MAAC	PENELEC	498.6	3.9	502.5	437.7	3.6	441.3
MAAC	PPL	1,505.3	11.8	1,517.1	1,299.5	9.7	1,309.2
MAAC Sub Total**		8,413.8	207.6	8,621.4	7,236.8	199.6	7,436.4
RTO	AEP	1,665.4	9.8	1,675.2	1,635.1	9.2	1,644.3
RTO	APS	912.0	5.9	917.9	886.8	5.5	892.3
RTO	ATSI	1,055.1	3.0	1,058.1	955.7	2.7	958.4
RTO	COMED	1,546.9	546.2	2,093.1	1,535.7	546.2	2,081.9
RTO	DAY	265.1	3.7	268.8	231.9	3.7	235.6
RTO	DEOK	60.4	-	60.4	54.6	-	54.6
RTO	DOM	1,381.3	52.6	1,433.9	1,359.5	52.1	1,411.6
RTO	DUQ	245.6	3.1	248.7	222.3	3.1	225.4
Grand Total		15,545.6	831.9	16,377.5	14,118.4	822.1	14,940.5

*All MW Values are in UCAP Terms
**MAAC Subtotal includes all MAAC Zones

Source: Comments of PJM Interconnections, L.L.C. in Docket No. EO-11050309 (the New Jersey Board of Public Utility's Investigation of Capacity Procurement Transmission Planning), dated June 17, 2011.

Figure 7:
Demand response in PJM's Base Residual Auction



PJM, "2014/2015 RPM Base Residual Auction Results"

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Figure 8 –
PJM Base Residual Auctions: Offered and Cleared Resources

Auction Results (all values in UCAP**)	RTO*						
	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015
Generation Offered	131,164.8	132,614.2	132,124.8	136,067.9	134,873.6	147,188.6	144,108.8
DR Offered	715.8	936.8	967.9	1,652.4	9,847.6	12,952.7	15,545.6
EE Offered	-	-	-	-	652.7	756.8	831.9
Total Offered	131,880.6	133,551.0	133,092.7	137,720.3	145,373.3	160,898.1	160,486.3
Generation Cleared	129,061.4	131,338.9	131,251.5	130,856.6	128,627.4	142,782.0	135,034.2
DR Cleared	536.2	892.9	939.0	1,364.9	7,047.2	9,281.9	14,118.4
EE Cleared	0.0	0.0	0.0	0.0	568.9	679.4	822.1
Total Cleared	129,597.6	132,231.8	132,190.5	132,221.5	136,143.5	152,743.3	149,974.7
Uncleared	2,283.0	1,319.2	902.2	5,498.8	9,229.8	8,154.8	10,511.6

* RTO numbers include all LDAs

** UCAP calculated using sell offer EFORd for Generation Resources. DR and EE UCAP values include appropriate FPR and DR Factor

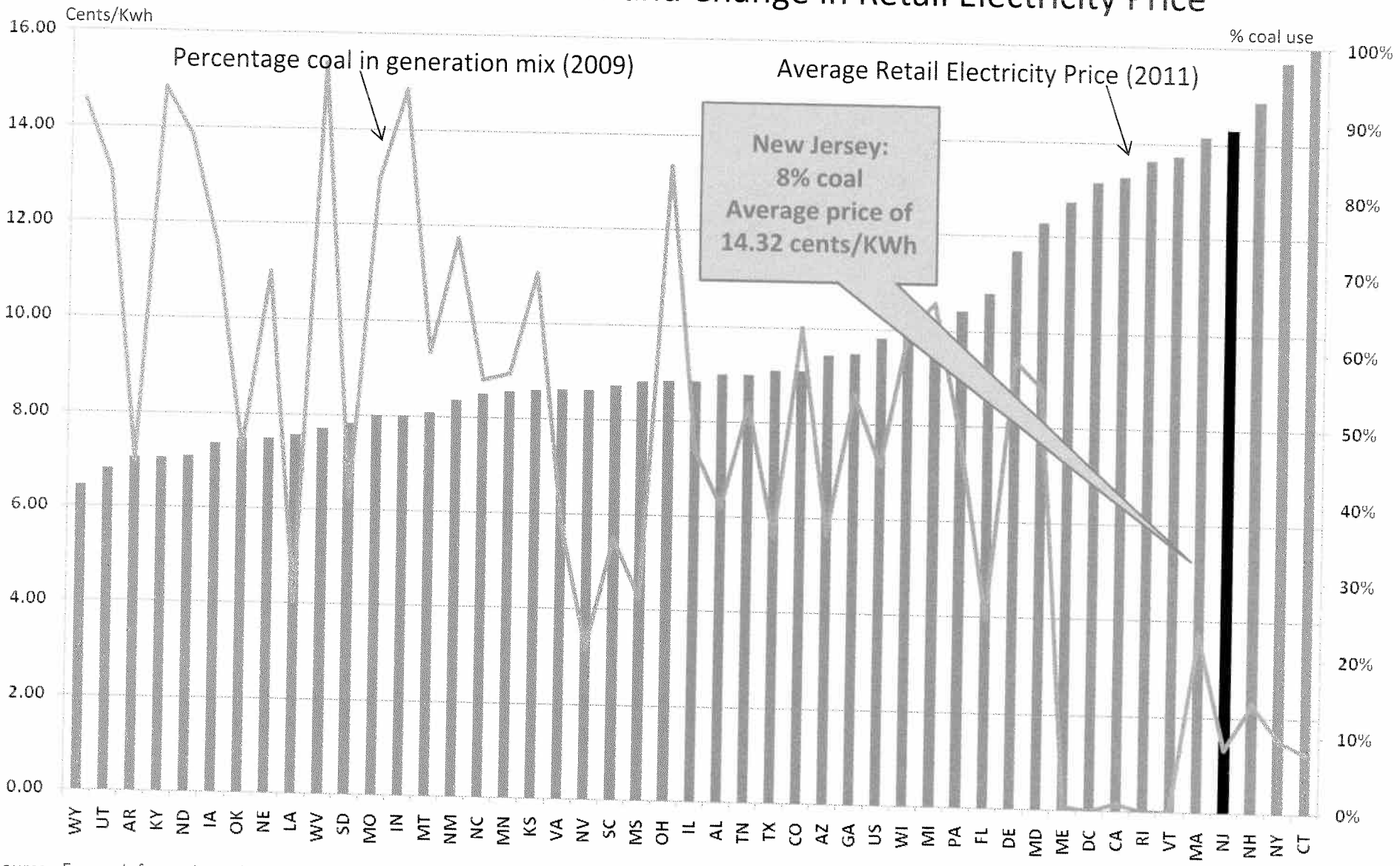
In 2011/2012 forward market:
Offered resources:
99% = generation
1% = demand response
Of the amounts cleared:
99% = generation
1% = demand response
4% more MW offered than needed

In 2014/2015 forward market:
Offered resources:
90% = generation
10% = demand response and energy efficiency
Of the amounts cleared:
90% = generation
10% = demand response and energy efficiency
7% more MW offered than needed

9 MW of generation offered by not cleared: To be retired?

PJM, "2014/2015 RPM Base Residual Auction Results"

Figure 9:
Comparison of States' Reliance on Coal for Power and Change in Retail Electricity Price



Source: Energy Information Administration data. The chart does not include two states (HI, AK) within the lower 48 , and removes 3 states in the Pacific Northwest (WA, OR, ID) that have ,ore than 80% of their generation produced at hydroelectric power plants.

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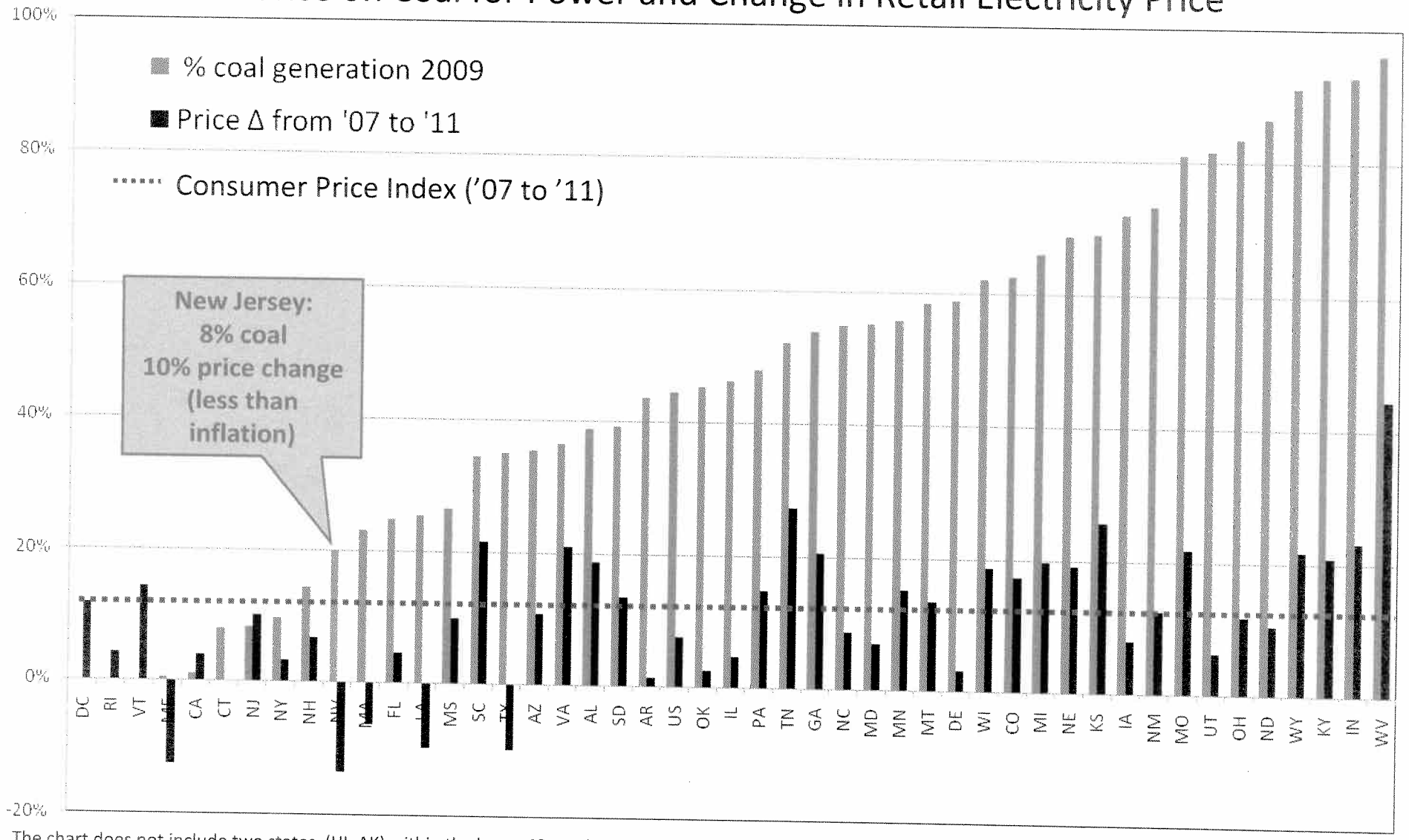

The chart does not include two states (HI, AK) within the lower 48 , and removes 3 states in the Pacific Northwest (WA, OR, ID) that have ,ore than 80% of their generation produced at hydroelectric power plants.
Sources: Percentage coal in state generation mix and electricity price data are from Energy Information Administration; CPI data are from t the Bureau of Economic Analysis.

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