

**Response of the Alliance for Retail Energy Markets to the  
Request of President Michael Picker for Informal Comments  
on the Customer and Retail Choice En Banc and White Paper**

Daniel W. Douglass  
DOUGLASS & LIDDELL  
4766 Park Granada, Suite 209  
Calabasas, California 91302  
Telephone: (818) 961-3001  
Facsimile: (818) 961-3004  
[douglass@energyattorney.com](mailto:douglass@energyattorney.com)

Attorney for the  
**ALLIANCE FOR RETAIL ENERGY MARKETS**

June 16, 2017

**Response of the Alliance for Retail Energy Markets to the  
Request of President Michael Picker for Informal Comments  
on the Customer and Retail Choice En Banc and White Paper**

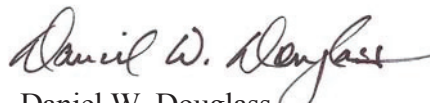
Pursuant to a June 1 email sent by Suzanne Casazza of the California Public Utilities Commission (“Commission”), parties were informed that Commission President Michael Picker had requested informal comments from the public on the CPUC’s Staff White Paper titled “Consumer and Retail Choice, the Role of the Utility, and an Evolving Regulatory Framework,” published May 9, 2017, and on the questions posed to the panelists at the Joint CPUC and California Energy Commission (CEC) En Banc on The Changing Nature of Consumer and Retail Choice in California, held on May 19, 2017.

Parties were encouraged to focus on the questions that were asked of the panelists that most closely represent their organization’s interests and encouraged to attach any reports for Commission consideration as appendices to their comments. The page limit on comments is two pages for comments on the White Paper and two pages for each set of questions posed to a panelist at the En Banc. Comments may include reports as appendices, which will not count against the page limit.

Although parties were informed that these informal comments would not be part of a formal proceeding record, they were cautioned that if the comments relate to a formal CPUC proceeding, the Commission’s Rules of Practice and Procedure for ex parte communications will apply.

The Alliance for Retail Energy Markets (“AReM”)<sup>1</sup> response attached hereto has complied with these directives.

Respectfully submitted,



Daniel W. Douglass  
DOUGLASS & LIDDELL  
4766 Park Granada, Suite 209  
Calabasas, California 91302  
Telephone: (818) 961-3001  
[douglass@energyattorney.com](mailto:douglass@energyattorney.com)

Attorneys for the  
**ALLIANCE FOR RETAIL ENERGY MARKETS**

June 16, 2017

---

<sup>1</sup> AReM is a California mutual benefit corporation formed by Electric Service Providers (“ESPs”) that are active in California’s Direct Access (“DA”) retail electric supply market. This filing represents the position of AReM, but not necessarily that of a particular member or any affiliates of its members with respect to the issues addressed herein.

## AReM Comments on the Staff White Paper

AReM appreciates the significant effort undertaken by Commission Staff to prepare the white paper describing the changing “electricity landscape” and highlighting “key framework policies.” Moreover, AReM appreciates the paper’s focus on California’s future. The future best able to meet California’s climate change goals efficiently, effectively and innovatively is one with fully open retail choice available to all consumers and utilities operating as wires companies that *facilitate* energy choices by customers and third-party suppliers.

Several key actions are required to make this future a reality: (1) transition of the “role of the utility” to a wires-only company; (2) lifting of the cap on the direct access market; (3) eliminating as much as possible any further “on-behalf-of procurement” by the investor-owned utilities (“IOUs”); and (4) ensuring clear, uniform rules for all market participants.

Thus, AReM strongly supports Staff’s recommendation that the Commission open a rulemaking to discuss the structure of the retail market and the “transition from IOUs’ responsibilities today and their responsibilities in the future.”<sup>2</sup> Obviously, an essential feature of a vibrant future energy landscape would be a transformation of California’s IOUs into wires-only companies, which would require the following actions:

- Implementing a provider of last resort (“POLR”) model that provides service to customers that do not choose an alternative supplier;
- Transitioning to “wires-only” that provides recovery of stranded costs and mechanisms that limit further utility procurement on behalf of non-bundled customers;

The white paper explains that the Commission “must evaluate” whether a new POLR requirement should be put in place,<sup>3</sup> but argues that only Texas has jettisoned this “role” for the utilities. That is accurate, but there are POLR models in other markets that do not involve the IOUs. AReM urges that all these options should be explored and evaluated as part of the deliberations on how to adapt the utility role in a retail choice environment.

The white paper also notes the need to address the “legacy” costs of the IOUs during a “transition to retail choice.”<sup>4</sup> Although the IOUs have already enjoyed a lengthy “transition to

---

<sup>2</sup> Staff White Paper, p. 14.

<sup>3</sup> Staff White Paper, p. 10.

<sup>4</sup> Staff White Paper, p. 11.

retail choice” that began in 1998 with the advent of direct access (“DA”) and continued in 2002 with the implementation of community choice aggregation (“CCAs”), AReM understands and acknowledges that the Commission has directed procurement by the IOUs for many different reasons, including procurement on behalf of non-bundled customers, and that fair recovery of those costs will be an important part of a transition to more fully competitive retail choice in California.

Finally, the white paper argues that “clear rules” are needed governing customers returning to utility service.<sup>5</sup> In fact, clear and explicit rules are well established for direct access customers, governing customer switching, as well as return to utility bundled service.<sup>6</sup> However, AReM agrees that the new retail choice rulemaking should revisit the current switching rules so that they *facilitate* customer switching to and from utility service, if the utility retains a load serving role, without the need for required long term stays on utility service for customers that return to the utility POLR service.

AReM responds next to the series of questions posed by Commission President Michael Picker.

---

<sup>5</sup> Staff White Paper, p. 11.

<sup>6</sup> For example, D.12-12-026 is the most recent decision revising direct access switching rules.

## AReM Response to *En Banc* Questions

### I. Panel Discussion: What Customers Want

- A. In this ‘future’ retail electric system, how do you see the role for the regulated utility evolving and what role do consumers’ choices play in achieving public policy goals?
- B. As technology and customer engagement evolves, what regulatory models do you believe are best suited to allow customers to make the choices they want while ensuring that all necessary investments are made to achieve California’s environmental and reliability goals? Do you think that the CPUC should react to it over time, or attempt to shape its direction (and conditions)?
- C. Should residential customers have access to alternative retail suppliers other than CCAs? If so, describe the types of choices you want to have?
- D. One concern about expanding consumer choice is safeguarding consumer from bad actors, what consumer protections need to be in place going forward? Are there any specific conditions, beyond essential consumer protections, that should be imposed on non-Utility load serving entities that want to serve the residential market? Should consumer protections be limited to for-profit entities and not CCAs? Should the regulated utilities always be available as a provider of last resort?

As customers explore and select alternatives to traditional vertically integrated electricity supply through DA, CCA and distributed generation options, AReM foresees a transition during which the state's investor-owned utilities ("IOUs") will be responsible for the construction, operation and maintenance of their existing and future transmission and distribution systems pursuant to the existing rate regulated cost-of-service framework. This is both a role for which they are well-equipped and one that will not harm their investors as it is the source of all their utility-based shareholder earnings. The IOUs should also have the ability to recover all appropriate costs associated with previous and future supply-side purchase requirements. As a general principle, it has been observed that where retail choice is vibrant, IOUs are generally wire companies with the ability to support various customer and public policy demands. For example, this is the case throughout the Texas, New England, New York, and Mid-Atlantic organized markets.

Furthermore, increasing the ability for customers to choose their electric supplier need not come at the expense of achieving the state's environmental or reliability goals. Indeed, the markets that support broad retail choice have ample reserve margins and vibrant renewable portfolio standards and emission reduction goals. The same should be true in California; that increasing retail choice will facilitate achievement of the increasingly higher levels of renewable and emission free electricity supply that Californians desire.

While the question asks if the Commission should attempt to react or shape the direction in which the industry is headed, this is not an either/or option. The Commission clearly has a hands-on role in terms of shaping the transition to full retail choice, most notably with respect to oversight of certain enforcement obligations to ensure compliance with mandated goals, including mandates relative to resource adequacy ("RA"), the renewable portfolio standard ("RPS"), energy storage, and greenhouse gas ("GHG") emission reductions. AReM recommends that the Commission identify its enforcement and compliance duties and focus on them, rather than on mandating what products can be offered or what choices consumers can make.

Put simply, all consumers from the smallest residential to the largest industrial should have a multiplicity of choices and not be obligated solely to take "one size fits all" service, whether bundled service from an IOU, DA service from an ESP or service from CCA. We routinely accept choice as a matter of fact in almost all our daily activities. We choose where to shop, where to dine, what cable company to use, what gasoline retailer, what cellular carrier.

Electricity should be no different. Choice by its very nature encourages more market participants and this multiplicity of suppliers and consumers facilitates innovation, competition and lower costs.

Consumer protections, especially for residential and small commercial load, must be maintained. However, AReM does not believe that there should be any dichotomy between the consumer protection requirements imposed on non-profit or for-profit suppliers. AReM is unaware of any significant or pervasive consumer protection issues that have occurred under existing regulations. Therefore, AReM would suggest that any changes to the current consumer protection requirements should target and address any area of the current regime that does not or is not expected to work well as retail choice increases.

AReM does not believe the utilities must necessarily continue to be saddled with the POLR obligation, although such a model is certainly workable in a retail choice market structure. There are several models in the existing retail choice markets that work well to ensure that customers who for whatever reason do not select a competitive supplier are provided with stable pricing and reliable supply, even while their right to select an alternative supplier is maintained. Moreover, these models also provide for customers who elect alternative supply to return to the POLR service should that become necessary or desirable, and the construct of the POLR models is such that they present no financial risks to themselves, and limit any obligation for owning generation assets. AReM notes that the transition to an appropriate POLR model for California will likely be among the biggest challenges and most sweeping change that is necessary for retail choice to thrive. Therefore, AReM recommends that the Commission seek additional input on POLR procurement models, including determining the POLR preferences of the IOUs, to begin the assessment of what will work best in California.

## **II. Panel Discussion: State of Customer Choice in California**

- A. Having heard from the customer panel, what value or services does your company/organization offer customers that is distinct from the distribution utility? Are there specific innovations in tariffs or services that you are better equipped to provide than the traditional utilities?**
- B. As retail choice grows, whether through the growth in CCA programs, customer adoption of DERs, or reinstatement of full direct access, what do you see as the role for the regulated utility and where do you see your company/organization competing and cooperating with the utility?**
- C. As competition evolves and as competitive suppliers and technologies presumably supply greater shares of customers' electric energy needs, what regulatory models do you believe are best suited to promote competition while ensuring that all necessary investments are made to achieve California's environmental goals while maintaining reliability? Why?**
- D. What are important authorities that the CPUC should maintain or gain in the future to regulate the supply and resource adequacy portfolios as heavily for non-IOU suppliers as it does for IOUs? Should all retail sellers be required to procure long-term system and local capacity, or should the utilities continue to bear this responsibility? Are there other types of investments that should be made by the utilities or the ISO rather than by competitive suppliers representing many distributed decision makers?**
- E. Should the cap on retail choice be lifted? If so, for all customers or only for non-residential customers? Without any limits whatsoever? Should retail choice be available to residential customers in CCA territories? Who should bear the provider of last resort in any particular area?**
- F. Does the utility business model need to change fundamentally to accommodate greater choice? If so, in what ways? For example, should the utilities eventually become pure distribution providers with no retail function?**
- G. What role do you see yourselves as competitive suppliers playing in the provision of service to low-income and hard to serve customers? How do we ensure that these customers receive the same level and cost of service as higher income and easier to reach customers?**



AReM is comprised of ESPs that serve a large portion of the state's DA load and participate in the CCA programs. DA service is popular not simply because it affords customers choice and the ability to actively manage their energy costs by selecting among a variety of pricing options. DA customers also can receive individually tailored, customer-specific services that monolithic IOUs are unable or unwilling to provide. If a customer wants 100% green power, an ESP can provide it. If it wants billing services to reflect and work with its own accounting systems and generates energy use reporting that helps manage energy use, an ESP can provide it. If it wants assistance with unique behind the meter storage or distributed energy resources, or with participation in demand response opportunities, an ESP can provide that as well, including financing of energy efficiency tools on their commodity bill. Put simply, ESPs are customer driven and efficiently and effectively meet individually designed and desired customer needs.

Furthermore, retail competition almost inevitably results in lower prices to consumers. In a recent study for the Retail Energy Supply Association ("RESA"), Dr. Philip O'Connor, former Chairman of the Illinois Commerce Commission, concluded that, "Prices in competitive states have trended downward while in monopoly states prices have been rising, producing a double-digit gap in average price changes when adjusted for inflation."<sup>7</sup> A February 2014, joint report prepared by the Illinois Chamber of Commerce, Manufacturers' Association, Retail Merchants Association and Business Roundtable reported to the Illinois General Assembly that:

When the new law began implementation in mid-1998, Illinois had the 13th highest average electricity prices in the United States. In 2013, Illinois' average electricity prices were among the ten lowest in the country. Illinois electricity consumers—residential, business and government—have paid \$37 billion less since 1998 than they would have if our state's average electricity rates had maintained their above average level in the decade prior to industry restructuring.<sup>8</sup>

As noted by Dr. O'Connor, "The central problem with the traditional model of monopoly electricity pricing in a future characterized by low growth is that it inevitably results in higher per unit prices on shrinking sales volumes in order to cover fixed generation costs. This is the conundrum at the heart of the much-discussed 'utility death spiral.'"<sup>9</sup>

---

<sup>7</sup> Restructuring Recharged - *The Superior Performance of Competitive Electricity Markets 2008-2016*, April 2017. AReM does not attach a copy as RESA will do so in its comments.

<sup>8</sup> "Electricity & Natural Gas Customer Choice in Illinois—A Model for Effective Public Policy Solutions," (copy attached).

<sup>9</sup> "Evolution of the Revolution: *The Sustained Success of Retail Electricity Competition*," by Philip R. O'Connor, Ph.D. and Erin M. O'Connell-Diaz, July 2015, at pp. 7-8 (copy attached).

This situation can be addressed by providing for fair recovery of any stranded costs and implementing procurement models, such as those used by POLR providers in other markets, that avoid the creation of new stranded costs. In short, the fundamental element of the transition is that the IOUs be allowed to stop or transition away from having to procure base load generation for load they do not serve or will not be serving. The Commission should rigorously examine IOU load forecasting and procurement so that stranded costs burdens are curtailed. The Commission cannot maintain the existing cost allocation mechanism paradigm in a market that is expected to facilitate retail choice

Certainly, AReM advocates for reopening of the DA market even as the CCA market continues to grow. The Commission simply cannot be serious about facilitating retail choice if only some versions of choice are permitted, although AReM recognizes that the authority for expansion of DA resides with the California legislature. Nevertheless, the question as to whether the Commission needs to have an increased level of regulatory oversight on the procurement practices of competitive suppliers is one that should be addressed.

ESPs can procure long-term system and local capacity in a reopened and uncapped market. For ESPs to do so, however, there must be market based tools, such as a centralized capacity market or some form of fixed resource requirement structure to provide a way to manage capacity procurement risks that will occur, as ESPs contracts with its DA load may differ from the underlying RA compliance requirements. AReM believes that implementation of the market based tools to ensure reliability will be one of the key challenges of the transition to full retail choice but a further benefit of putting these changes in place is that the competitive development of new generation by ESPs and CCAs s will be far less likely to result in costly excess capacity. The market will deliver the investment mandated by environmental and reliability requirements so long as there are appropriate risk management tools and relief from the current stranded costs burden.

Reopening the competitive DA market and continued CCA expansion will ultimately benefit customers. A reopened DA market will encourage additional market entrants that are successful retail providers in states that are more receptive to competition than California. More suppliers will cause competition not only as to price, but also with respect to innovation and services. This will affect both ESPs and CCAs and drive them both in the direction of offering greater services, lower prices and more options. Consumers will benefit directly from this increased competition, as they should.

### **III. Panel Discussion: Investor-Owned Utility Perspective on Current State of Retail Electricity Market and Coming Changes**

- A. In this ‘future’ retail electric system, how do you see the role for the regulated utility evolving and what, if any, functions should be preserved for the regulated utility support achieving State policy goals? Do you see some form or another of retail “choice” as inevitable, in part as a result of technology changes like DERs? If so, do you prefer to see public policy (including policies adopted by the CPUC) react to it or drive it?**
- B. What regulatory models do you believe are best suited to promote competition while overseeing distribution utilities as their roles change? Should the CPUC have the clear authority to regulate the supply and resource adequacy portfolios as heavily for non-IOU suppliers as it does for IOUs? Are there other types of investments that should be made by the utilities (or the ISO) rather than by competitive suppliers representing many distributed decision makers?**

A future retail electric system should ideally be one in which end-users are free to select the supplier of their choice and to work with suppliers to devise supply portfolios that meet their energy needs, consistent with established and clear reliability and environmental mandates. One way to accomplish that is to transition the utilities away from their role as a rate-regulated, vertically integrated supplier of energy to a wires company approach where their focus is on constructing, maintaining and operating their distribution systems.

This transition will require that the IOUs' existing supply portfolios be monetized, transitioning these supply resources to competitive ownership. Again, models for achieving this transition already exist in the retail choice markets, ranging from outright divestiture through sale of the resources to transfer of the assets to competitive affiliates.

Effectively then, the Commission's role is to continue in its oversight of retail provider compliance with established mandates. It is also important to continue to ensure that the selected POLR structure works well to provide POLR customers, including low-income or hard to serve customers, with reliable supply, and that customer switching among suppliers and to and from POLR service is well managed. AReM believes that programs benefitting low income and hard to serve customers are beneficial and should be maintained. If, however, there is a broad reopening of DA, participation in these programs should not compromise customers' right to choose.

AReM is compelled to note that the question posed about what authorities the Commission needs "to regulate the supply and resource adequacy portfolios as heavily for non-IOU suppliers as it does for IOUs" (emphasis added) reflects a troubling command-and-control approach that will not facilitate retail choice – and should indeed be rejected. The Commission should not regulate either ESP or CCA supply portfolios, and instead should focus on ensuring that competitive suppliers achieve compliance with reliability and environmental requirements. As the Commission has stated in numerous proceedings, the focus should be not on "HOW" competitive suppliers achieve compliance, but only that they "DO" comply.<sup>10</sup>

Rather, these entities, which are far closer to their customers' needs and desires, should be free to make decisions that best meet the needs of those customers, consistent with the stated

---

<sup>10</sup> "In the context of the RPS program, our primary concern is to ensure that ESPs and CCAs do in fact reach the goal of 20% renewable energy by 2010. We are, however, somewhat less concerned about the details of how they get there." D.05-11-025 at pp. 12-13 [footnote omitted].

reliability and environmental mandates. Indeed, the Commission's important role in a full retail choice regime should be focused on oversight and enforcement of compliance with those requirements, not with oversight of what resources competitive suppliers select to achieve compliance. An examination of how other states with open direct access markets have managed the transition from vertically integrated IRP procedures to retail choice should be helpful as these concepts are further explored.

It was notable at the *en banc* that the IOU representatives focused much of their presentations on their need to recover stranded costs and their portfolio allocation methodology ("PAM") proposed in the joint IOU application A.17-04-018. AReM believes the evaluation of PAM should take place as an essential part of the new proceeding that should be opened to consider *en banc* issues. PAM should be considered in the context of the overall market structure transformation that is underway so that its evaluation will more appropriately address whether PAM is a better stranded cost recovery mechanism than the current PCIA. More importantly, it will provide the forum to address how to eliminate the creation of new stranded costs and eliminate the stranded cost burden going forward in a more competitive retail market of the future.

Moreover, AReM and other CCA and DA retail choice advocates have long sought stranded cost reform, which the utilities now seek as well. A new proceeding to examine the broad issues will help advance the discussion of what must be done in order for the full spectrum of California residents and businesses to enjoy the benefits of retail competition for electricity service. The Commission should move now so that a new regulatory model and paradigm can be adopted that reflects the watershed changes that are transforming the electricity market.

#### **IV. “Big Think Presentation” on the Future of Retail Electricity Service**

- A. Are there any urgent steps that the CPUC, the CEC and/or CAISO need to take over next 12-18 months to begin changing the role of the utility and the structure of regulation?**
- B. Two kinds of customer choice are accelerating: customer-sited DERs and retail choice (either through CCAs and/or through other customer-driven processes). Do you see this as inevitable, or not? Do you think that the CPUC should react to it and/or adopt policy changes to shape it, or some of both?**
- C. What entity should have final responsibility for ensuring California meets its 2030 clean energy and climate goals?**
- D. What changes do each of these trends require of the distribution utilities and the regulatory framework? What are implications for resource procurement, long-term reliability and renewable integration particularly in view of the state’s aggressive climate goals? What changes, if any, in the way utilities earn their profits are necessitated by the growth in these kinds of departing loads?**
- E. Are the current CPUC and CAISO market rules adequate to ensure that non-utility retail sellers contribute a fair share to renewable integration and long-term reliability needs?**
- F. How do you see the role for the regulated utility evolving and what, if any, functions should be preserved for the regulated utility support achieving State policy goals?**
- G. What key lessons learned from California’s past and other restructuring efforts (CA Gas Deregulation, NY, HI, TX, UK) are particularly relevant as California plots the course forward?**

The most urgent step for the Commission should be to commence a new rulemaking to reconsider and modify the existing vertically integrated utility model so as to better facilitate the evolution that is occurring in customer choice, encourage retail competition, support the growth of CCAs and address stranded costs in a manner that leads to their eventual elimination. This will require at least four discrete steps. First, the Commission must curtail the current IOU over-procurement that exacerbates stranded costs. Second, it must determine how best to monetize the IOUs existing portfolios so that stranded costs can eventually be ended. Third, it must develop mechanisms whereby the IOUs transition to wires companies. And finally, it must decide how the POLR function will be structured. As those tasks are completed, the Commission should also focus on designing the appropriate compliance oversight to ensure all market participants are meeting the reliability and environmental mandates without imposing overly proscriptive investment requirements. In this manner, the Commission will continue its role of ensuring that the state meets its reliability, clean energy and climate goals while at the same time encouraging choice and removing the barriers to competition.

The lessons learned from states where retail competition is encouraged are many and varied. The O'Connor paper cited above notes the following in that regard:

- Customer Choice is thriving in 13 states and the District of Columbia, which have full access (“Customer Choice Jurisdictions”).
- From 2003 to 2013, in the 14 Customer Choice Jurisdictions, accounts served with supply from competitive suppliers rather than with power supply from local delivery utilities, grew by 524% for Commercial and Industrial (“C&I”) customers and 636% for residential, totaling 19 million customer accounts by year-end 2013.
- From 2003-2014, in the 14 Customer Choice Jurisdictions electrical load served by competitive suppliers grew dramatically even in an era of overall flat growth in electricity consumption: 181% for C&I and 673% for residential – accounting for 20 of every 100 kilowatt hours sold in the contiguous United States.
- Competition era price trends in the Customer Choice Jurisdictions have been more favorable to customers than price trends in the 35 traditional monopoly regulation jurisdictions (“Monopoly States”), with average electricity prices falling against inflation in Customer Choice Jurisdictions, but far exceeding inflation in Monopoly States.
- Customer Choice Jurisdictions, as a group, have outperformed Monopoly States in generation, attracting billions of dollars of investment in new, more efficient generation,

resulting in higher capacity factors than in Monopoly States and parity in resource adequacy to meet load.

- The five states of the Industrial Upper Midwest offer a compelling intra-regional example of the success of Customer Choice, with the competitive states Illinois and Ohio outperforming the Monopoly States of Indiana, Michigan and Wisconsin with lower price trends and greater generation efficiency.<sup>11</sup>

Results like this provide meaningful evidence that retail competition is good for consumers; good for attracting generation investment; and good for a state's economy. As California plots its course forward the lessons from the Customer Choice Jurisdictions are particularly enlightening and persuasive.

---

<sup>11</sup> The data sources for the O'Connor report are DNV GL (choice accounts and volumes) and the U.S. Energy Information Administration (prices, generation and consumption volumes). DNV GL provides authoritative information on competitive electricity markets ([www.dnvgl.com/energy](http://www.dnvgl.com/energy)) and the U.S. Energy Information Administration is the premier source for federally collected energy data ([eia.gov](http://eia.gov)).

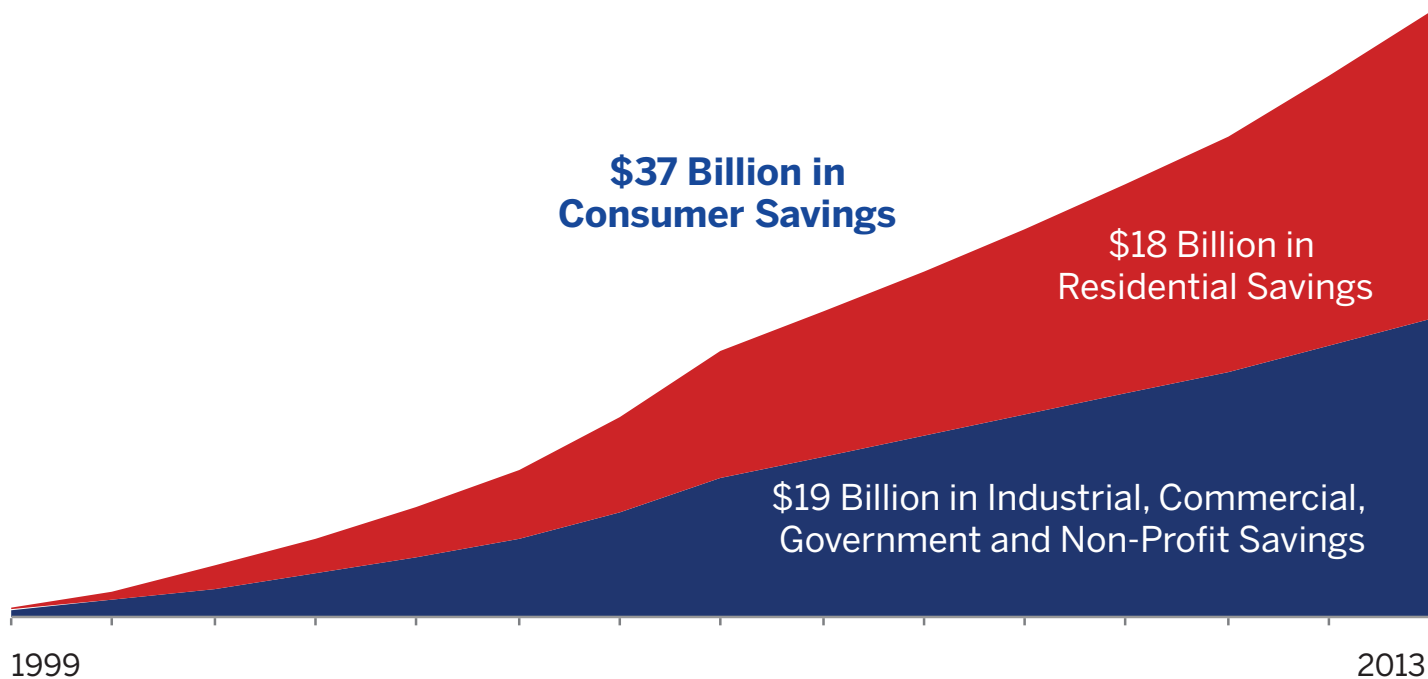


**A Joint Report**

Illinois Chamber Of Commerce  
Illinois Manufacturers' Association  
Illinois Retail Merchants Association  
Illinois Business Roundtable

# Electricity & Natural Gas Customer Choice In Illinois—A Model For Effective Public Policy Solutions

February 2014



**Illinois Retail Merchants Association:** IRMA is the only statewide association exclusively representing Illinois retailers. IRMA's more than 23,000 member stores cover the breadth and depth of retail in terms of size, merchandise lines and services. Since the commencement of electricity customer choice in Illinois, IRMA has sponsored a member access program that has saved millions of dollars for Illinois retailers and benefitted thousands of employees and millions of customers.

**Illinois Manufacturers' Association:** IMA is the oldest and largest state manufacturing trade association in the United States and the only statewide organization in Illinois dedicated exclusively to manufacturing. Founded in 1893, the IMA's mission is to advocate, promote, and strengthen the manufacturing climate for nearly 4,000 member companies and facilities. IMA's vision is an Illinois that builds on a history of manufacturing leadership to take its place as a premier manufacturing venue in a globally competitive environment. With the opening of the competitive electricity market, manufacturers were among the first to take advantage of lower market prices for power through the IMA's energy program.

**Illinois Chamber of Commerce:** The Chamber promotes the interests of Illinois business by working to improve the state's business climate, aggressively advocating legislation and public policies that support economic growth. The Chamber's Energy Council consists of members who generate, transmit or transport energy of all kinds as well as companies that are involved in the energy portfolio. The Council advocates for sound energy policy based on reality and not hype, hope or myth.

**Illinois Business Roundtable:** IBRT applies the knowledge, creativity and leadership resources of its members, more than 60 chief executive officers of Illinois' leading businesses, to complex Illinois policy issues. The Roundtable's mission is to speak with a unified voice on education, public finance, civil justice, infrastructure and other critically important long-term matters.

February 2014

To the Honorable Members of the Illinois General Assembly, 98th General Assembly

In 1997, Illinois embarked on a major change in how it regulates the electricity industry. The Illinois General Assembly opened the door to competition, customer choice and innovation. When the new law began implementation in mid-1998, Illinois had the 13th highest average electricity prices in the United States. In 2013, Illinois' average electricity prices were among the ten lowest in the country.

Illinois electricity consumers—residential, business and government—have paid \$37 billion less since 1998 than they would have if our state's average electricity rates had maintained their above average level in the decade prior to industry restructuring.

We believe that the stunning success of the Illinois approach of reliance on market forces rather than old-fashioned regulation can serve as a model for addressing other key issues facing our state. This paper describes the careful process and well-considered policies that have led to Illinois' status as the lowest-priced energy state in the industrial Midwest. Illinois' experience demonstrates that we can solve seemingly intractable problems and achieve genuine success.

Sincerely,



Douglas Whitley  
Illinois Chamber of Commerce



Greg Baise  
Illinois Manufacturers' Association



Rob Karr  
Illinois Retail Merchants Association



Jeffery Mays  
Illinois Business Roundtable



## A Triumph Of Market-Based Public Policy

Illinois' decision to competitively restructure its natural gas and electricity markets has been emphatically vindicated by the results. Supplier competition, access to broad regional energy markets and customer choice are the products of well-considered and conscientiously-implemented policies to open the monopoly utility industry to market forces.

Starting in the mid-1980s, Illinois became a pioneer in advocating and implementing non-discriminatory transport of customer-owned natural gas. Most other states followed, allowing larger customers to purchase natural gas from suppliers other than the local gas delivery utility. Illinois also liberalized the market for small gas customers. Natural gas prices for all Illinois end-users are highly competitive and generally are at the lower end for large northern industrial states.<sup>1</sup>

Illinois commenced electricity restructuring in the late 1990s. For well more than a decade prior to customer choice, average electricity prices in Illinois consistently had been significantly above the national average and were the highest among the five Upper Midwest industrial states.<sup>2</sup> Following the enactment of the Illinois Electric Service Customer Choice and Rate Relief Act of 1997,<sup>3</sup> the state entered an era in which its average electricity price consistently has been below the national average. In 2013, the average delivered price of electricity in Illinois was the lowest among the five Upper Midwest states and among the ten lowest in the United States.

Following the enactment of the Illinois Electric Service Customer Choice and Rate Relief Act of 1997, the state entered an era in which its average electricity price consistently has been below the national average.

## Illinois: Before & After Restructuring

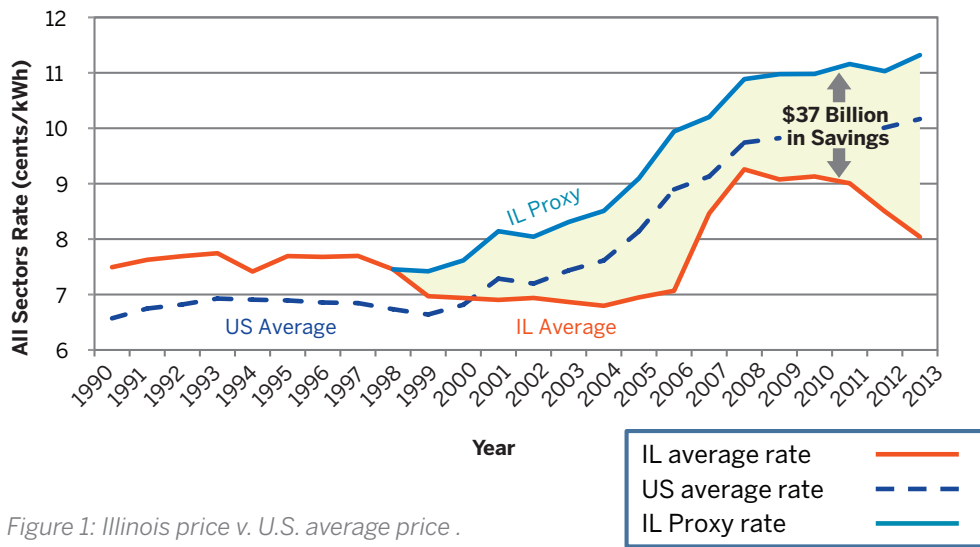
Figure 1 presents a comparison of Illinois' average delivered electricity prices to the national average in the decades before and after restructuring. It indicates **\$37 billion** in cumulative value for Illinois electricity customers since the pricing features of Illinois' restructuring law took effect in 1998. This calculation is based on the difference between actual Illinois average prices from 1998–2013 and the price level that would have prevailed (the proxy rate) if Illinois had maintained the same ratio relationship to national average prices after 1998 that had existed between 1990 and 1998.

Although residential customers accounted for less than one-third of all electricity use in Illinois since 1998, they have received nearly half of the price reduction benefits, over \$18 billion. This is an average savings of \$3,600 per household, or \$240 annually.

Industrial, commercial, government and non-profit customers were able to use the remainder of the \$19 billion in savings for reinvestment and job creation.

Illinois' successful transition from monopoly to competitive natural gas and electricity markets is not the final step, however. More remains to be done in the utility arena. Additional value for customers of all types can flow from modernization and strengthening of the natural gas and electricity delivery infrastructure, and from the streamlining of the regulatory oversight of the needed network investment. Further, Illinois' success in reforming and restructuring energy supply with a focus on customer choice and open markets should stand as a beacon for the development of solutions to other problems facing Illinois that may now seem as intractable as our utility problems once did.

### Restructuring Saves Illinois \$37 Billion



In 2013, the average delivered price of electricity in Illinois was the lowest among the five Upper Midwest states and among the ten lowest in the U. S.

Figure 1: Illinois price v. U.S. average price .

*"I voted for competition when I was a legislator, and in my current role as Chairman of the Illinois Commerce Commission, I am pleased to see the results."*

*~Doug Scott  
Illinois chief utility regulator*

## 1970s & 1980s: Illinois' Utility Rates Crisis

In the late 1970s and early 1980s, Illinois and a number of other states were in the midst of a utility rates crisis. Various forces were converging to produce rapidly rising natural gas and electricity prices. Under the traditional utility rate setting process in place at that time, utilities were vertically integrated regulated monopolies that provided both energy supply and delivery service to captive customers.

The era was one of serious economic stress and change:

- High interest rates, inflation and recession—“stagflation”
- Rising fuel prices propelled by international oil embargoes and counterproductive natural gas wellhead price regulation, inducing shortages and rapid price escalation
- Troubled nuclear projects challenged by changing regulation in response to the Three Mile Island accident
- New environmental regulations
- Declining or flat energy demand
- Rising energy prices in Illinois accelerating the out-migration of industrial operations to other states or countries

The impact of these conditions was inadvertently magnified by traditional rate-of-return, cost-of-service utility regulation.

Traditional monopoly regulation had worked well when natural gas and electricity were high-growth, declining cost businesses. However, when favorable conditions reversed, traditional regulation proved ill-suited to balancing the interests of consumers and utility investors. Heavily bureaucratized utilities and regulatory bodies could not promptly respond to rapidly developing conditions. As adverse and unintended consequences emerged, utility regulation became a major political issue and the governing consensus required to sustain traditional regulation began to fray and then unravel.

Given that traditional monopoly utility regulation, built on the foundations of the regulatory system for railroads—had been in place for most of the 20th century—the initial focus among state policy makers and participants in the regulatory process was on procedural reforms at the Illinois Commerce Commission. These changes, at best, were at the margins and could not have a serious impact on the central problem—traditional utility regulation was incompatible with changes in fundamental conditions in the energy and financial markets and in the globalizing economy.

## The Movement to Markets in Network Industries

The inefficiencies and market distortions in the energy sector evident in Illinois existed in other states and countries that were also in other regulated network industries such as airlines, railroads, trucking and telecommunications. There was a growing awareness that monopoly or heavily regulated enterprises, whether privately-owned, publicly-traded or government-operated, were unable to rapidly adapt to changes in technology, global market conditions, financial markets and consumer needs.

Ideas for change gradually filtered from academia to policy forums to legislative and regulatory circles and within regulated industries. A growing movement advocated for reforms to bring market forces to regulated industries and to allow for competitive pricing that was responsive to the dynamics of supply and demand.

The desire for change achieved critical mass in the late 1970s, precipitating a chain reaction of reform at the federal level leading to dramatic changes in the structure, operations and regulation of the network industries that accounted for a significant portion of the economy.<sup>6</sup>

Between 1978 and 1996 Congress, the U.S. Department of Justice, and key federal regulatory agencies including the Federal Energy Regulatory Commission (FERC),

Federal Communications Commission, Federal Aviation Administration, and the eventually disestablished Civil Aeronautics Board and Interstate Commerce Commission (not to be confused with the Illinois Commerce Commission) took steps that replaced network industry regulation of market entry/exit and pricing with competitive market forces. Interstate airline, railroad, intercity bus, trucking, natural gas and telecommunications all underwent substantial change, including the introduction of improved technologies and intense competition for market share.

Meanwhile, the wholesale sector of the electricity industry, regulated at the federal level, was moving toward open access and market pricing. While independent power producers (IPPs) accounted for less than 2% of total U.S. net generation in 1996, IPPs were proving that power plants did not have to be built, owned and operated by utilities. Between 1990 and 1996, total IPP generation doubled, accounting for much of the new capacity coming on-line, with the generation being sold to utilities. An increasing share of generation was being built, owned and operated by non-utility firms but selling their output mainly to utilities providing service to captive retail customers.<sup>7</sup> In the mid to late 1990s, more than a dozen states—Illinois among them—took steps to authorize retail customer access to the price-competitive wholesale electricity market.

## Natural Gas Industry Restructuring

Parallel to the rapid regulatory reform in the transportation and telecommunications industries at the federal level, Illinois was in the vanguard among the states grappling with the mismatch between traditional gas and electric utility regulation and the evolving fundamentals in the larger economy.

Shortly after enactment, the Federal Natural Gas Policy Act of 1978 (NGPA) was having a mix of positive and negative effects. Although the NGPA's price incentives elicited new supplies that alleviated the gas shortages of the mid-1970s induced by wellhead price controls implemented in the 1950s, the law also promoted take-or-pay contracts between pipelines and local gas utilities that had the effect of regulating prices "upward," beyond levels that a supply-and-demand mechanism would have produced. For example, the average price of the gas commodity delivered to Illinois residential customers more than doubled between 1978 and 1983.<sup>8</sup>

In early 1983, the Illinois Commerce Commission (ICC) proposed the Consumer Access Plan calling on federal regulators to require interstate pipelines—the near-exclusive middlemen between gas producers and utilities—to allow gas utilities and larger customers to purchase transport service only for gas supplies procured directly at the wellhead. In the months that followed, mounting economic pressure from large industrial users able to switch fuels or to shift production overseas or closer to gas fields on the Gulf Coast and in the Southwest forced some pipelines to utilize "special marketing programs" (SMP) allowing selected customers to transport customer-owned gas.

In 1984, Illinois Attorney General Neil Hartigan and Illinois Secretary of State Jim Edgar brought a landmark federal antitrust suit against one of the major pipelines that had refused to transport gas that the state had arranged to purchase for facilities such as the Capitol complex. The lawsuit succeeded in a surprising way. Although the lawsuit itself was eventually lost in late 1991 after having prevailed in numerous interim rulings, all of the major open access and market-based gas policies advocated by Illinois in the lawsuit had become policy at the national level by 1992:<sup>9</sup>

- 1985, the federal courts upended special marketing programs as unfairly discriminatory
- 1985, FERC issued Order 436 allowing pipelines to voluntarily provide flexibly-priced non-discriminatory transport for customer-owned gas rather than to function exclusively as merchant buyers-transporter-sellers of gas

- 1989, Congress passed the Natural Gas Wellhead Decontrol Act that by 1993 freed all "first sales" of natural gas from federal price controls, allowing the market to develop gas trading and price discovery mechanisms that laid a foundation for similar activity in electricity markets
- 1992, FERC issued Order 636, called the "Final Restructuring Rule," that fully unbundled natural gas pipeline transport services and pricing, removing interstate pipelines entirely from their traditional merchant role and confining them largely to gas transport

With pipeline and local utility take-or-pay arrangements largely resolved, transport capacity available on an equal footing to all customers and prices set by supply and demand, the stage was set not only for a vibrant market in the gas industry but also for the restructuring of the closely-related electricity industry.

In addition to its advocacy role at the federal level, the ICC took the initiative under its existing powers to open local gas utility delivery networks to customers—mainly commercial and industrial—to transport gas they had bought in the market.

Transport of customer-owned gas by Illinois gas utilities is now commonplace. Open access has been embraced by Illinois' larger business and government customers, and there is an active competitive retail market for residential customers as well. In 2013, there were more than two dozen certified non-utility alternative gas suppliers in Illinois marketing to all classes of customers.<sup>10</sup> Figure 2 shows the percentage of customer-owned natural gas transported in 2012 in Illinois compared to the total U.S. average.

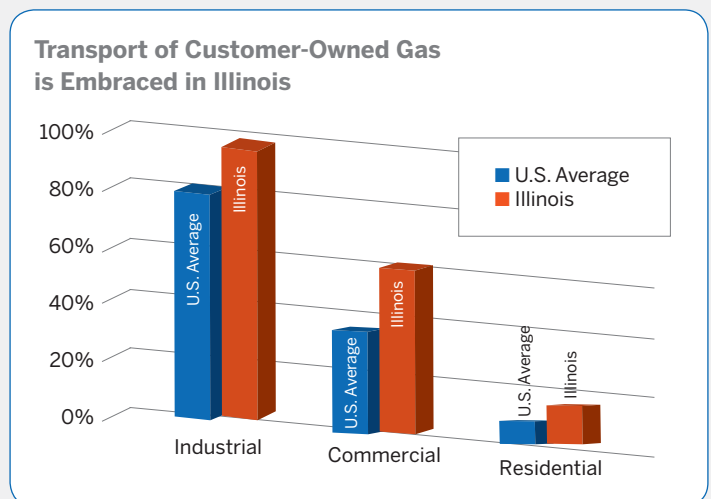


Figure 2: Percent of natural gas delivered as customer-owned in 2012, Illinois and U.S. average



## Federal Electricity Industry Restructuring

As natural gas and other network industries rapidly evolved toward more competitive structures, electricity regulatory policy was developing more slowly. In Illinois, change in the inherently more complex electricity sector was further complicated by the billions of dollars that Illinois utilities had invested and were continuing to commit in the nation's largest nuclear plant program. Utility rate cases at the ICC aimed at recovering those investments were engendering substantial consumer and political resistance. Illinois electricity rates were already well above national and Midwest state averages.<sup>11</sup>

Residential customers were complaining to state legislators about high bills, and business customers were being lured to other states promising lower electricity rates. The regulatory process became more contentious and court decisions became more hostile to utilities. Regulatory uncertainty became the order of the day. While there were the customary calls for stricter and even punitive regulation, it gradually became clear that another path was needed.

Developments at the federal level would open the door to new policies that would gradually restructure wholesale electricity markets which, in turn, would provide the underpinning for change at the state-regulated retail level:

- In 1978, Congress passed the Public Utilities Regulatory Policies Act (PURPA) as part of the National Energy Act. PURPA mandated that local electric utilities purchase power from “qualifying facilities” (QF) that used certain alternative fuels such as agricultural waste or that met certain production efficiency standards. PURPA led to the development of many small generation projects including mini-hydro and created favorable conditions for cogeneration that produced electricity in conjunction with steam and heat for industrial purposes. The law authorized state utility commissions to set “avoided cost” levels that were the basis for the contractual rates paid to the QFs. PURPA gradually demonstrated that electricity power stations could be built, owned and operated by enterprises other than utilities without adverse impacts on reliability or network performance. In many states, though not Illinois, QFs exerted upward pressure on prices as a result of high avoided cost calculations by state utility commissions.
- In recognition of the growing success of natural gas open access and price competition, FERC held a number of regional conferences to consider similar reforms in wholesale electricity and transmission. In 1988, FERC issued a notice of proposed rulemaking (NOPR) that would have far-reaching effects. Although the rules were withdrawn due to utility industry and political pressure, they ultimately proved to be the roadmap for national reforms that would contribute to Illinois' own reforms. Among other things, FERC proposed that utilities use competitive bidding to acquire new generation supply to serve consumers so that prices would be set in the market and independent power producers could be key participants in that market.
- In 1990, Congress amended the Clean Air Act to create a program of tradeable sulfur dioxide (SO<sub>2</sub>) emission reduction credits for more efficient control of the acid rain problem related to sulfurous coal used in some generating plants. The trading program contributed to an understanding that a market-based mechanism could be the solution for complex electricity and environmental challenges.
- Congress included in the Energy Policy Act of 1992 provisions that were substantially similar to the market reforms suggested in FERC's 1988 NOPRs. Among these were the creation of a new class of “electricity wholesale generators” (EWG) free of ownership and other restrictions in the New Deal era Public Utility Holding Company Act (PUHCA). Further, Congress directed FERC, on a case-by-case basis, to open up the transmission network for wholesale transactions that were market-based. Thus, investors in generation could better respond to market forces of supply and demand and relative prices of coal and natural gas.

In 1996, FERC issued a series of orders aimed at liberalizing transmission access and increasing oversight by independent system operators (ISO) to assure non-discriminatory treatment of transmission requests. ISOs eventually evolved into regional transmission organizations (RTOs) that organize markets for unbundled transmission services and generating capacity.<sup>12</sup>

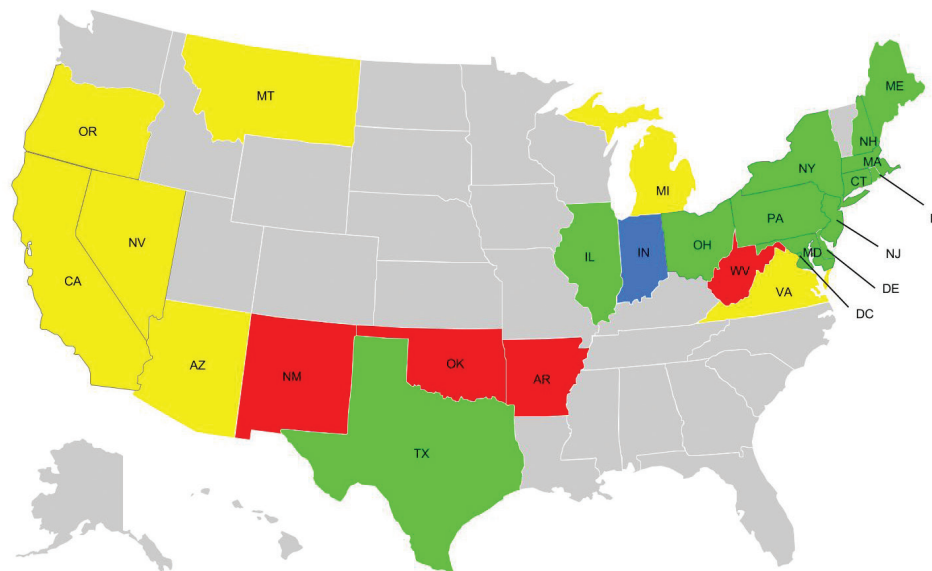
## Electricity Restructuring in the States

By 1997, federal changes in natural gas and electricity policy, many of which were advocated by Illinois regulators, set the stage for the restructuring of the electricity industry in Illinois and other states.<sup>13</sup> In just a few years, nearly a score of states enacted a variety of measures to introduce competitive forces as an alternative to traditional utility monopoly over supply.

Several states, most notably California, failed to fully implement customer choice.<sup>14</sup> Others, however, continued on the path toward comprehensive market-based reform. Illinois was in the vanguard of states that stayed the course in restructuring their electricity markets. The map in Figure 3

shows that most of the states in the northeastern quadrant of the country, along with Texas, have embraced competitive markets.<sup>15</sup> Thirteen states and the District of Columbia have broad-based retail customer choice. These 14 jurisdictions account for 35% of total U.S. electricity consumption.<sup>16</sup> Due to the high participation by customers in open access electricity arrangements, more than 20% of all electricity load in the continental U.S. was served under competitive contracts of one kind or another in 2013.<sup>17</sup> A number of states, most notably California and Michigan, are hybrids of customer choice and traditional monopoly that allow only highly-restricted access to the competitive market.

**Illinois and 13 Others Have Full Access<sup>18</sup>**



- Full customer choice for all classes (13 + DC)
- Extremely limited customer choice (7)
- Considering retail shopping (1)
- Restructuring law repealed or delayed (4)
- Not considering restructuring (25)

*Figure 3: Electricity customer choice jurisdictions*  
Source: COMPETE Coalition

Most of the states in the northeastern quadrant of the country, along with Texas, have embraced competitive markets, accounting for 35% of total U.S. electricity consumption.

## The Illinois Restructuring Policy Process

By the mid-1990s, there was widespread dissatisfaction in Illinois with the outcomes of the traditional monopoly regulation. As customers were burdened with high and rising rates, the system was no kinder to the utilities. Regulators and the courts had imposed significant recovery disallowances on investments in nuclear power plants. The utility industry's confidence in traditional regulation waned, and utilities saw ever-increasing obstacles to earning a reasonable return under cost-of-service regulation.

In early 1997, the Illinois General Assembly commenced an all-stakeholders process charged with developing a widely-agreed approach to introducing market forces into Illinois' electricity industry and creating flexible conditions for its restructuring. The goal of the stakeholder process was to identify and resolve as many issues as possible in order to minimize the scope and complexity of the issues that would need to be resolved in the legislative process. Stakeholders did not have the advantage in 1997 of being able to look to any fully-functioning electric retail choice models operating elsewhere in the United States. They were exploring new territory.

The stakeholder process focused on five key topics:

### Supply Competition

By the mid-1990s, although competitive wholesale electricity markets were developing rapidly, retail competition was something new and largely untried. However, the experience in natural gas retail customer choice had demonstrated that business customers could successfully purchase their natural gas commodity from competitive suppliers while continuing to rely on utilities to reliably deliver that supply. The challenge was to devise reasonable ways for retail customers of all sizes to access the competitive pricing dynamics of the wholesale electricity market unhindered by the traditional rigidities of the "one size fits all" tariffs characteristic of state utility regulation. The complexities and unique technical features of electricity argued for reliance on competing intermediaries licensed and overseen by the ICC.

### Delivery Network Open Access

Stakeholders saw that two key challenges in assuring non-discriminatory access to the delivery network were rates and rules. The first was the development of rates for delivery services based solely on the costs of providing those services exclusive of costs associated with supply for customers who continued to buy their electricity from the utility. The

elimination of cross-subsidies among functional services and customer classes would allow for accurate pricing and for fair dealing by owners of delivery wire networks with customers and competitive suppliers. The other challenge was the development of the terms and conditions for use of the wires network by alternative retail electricity suppliers (ARES) and their customers. Open access at the distribution level supervised by the ICC would complement the open access at the bulk transmission level that was being promoted by FERC.

### Phased Transition

In light of Illinois' pioneering status in electricity choice, stakeholders opted for a phase-in approach that would provide for staggered customer eligibility for choice, moving from the sophisticated larger customers to residential customers over a several year period. The utility, however, would remain as a provider of last resort (POLR) in the event that the market did not develop satisfactorily. In recognition of transaction costs and other barriers to an immediate transition to full customer choice, utility rates for all customers would be frozen for a number of years, with residential customers' rates also being reduced.

### Industry Reorganization

Stakeholders recognized that in addition to outdated regulatory methods there was also an outdated industry structure rooted in vertically-integrated monopoly. For customer choice to succeed, Illinois utilities would need the flexibility to reorganize in order to more efficiently accommodate changing technology, financial markets and customer expectations. Utilities would not be forced to adopt any specific corporate structure but allowed to determine how best to meet their needs while meeting their obligation to facilitate supply competition by providing delivery open access.

### Stranded Cost Compensation

Stakeholders, after analyzing the gap between the rate-base or book value of utility generating assets and the value of those power plants in the wholesale market, concluded that a method was needed to mitigate the financial implication for utilities from a move to customer choice. While there were concerns that transition fees on customers would reduce the savings to be realized under customer choice, it was recognized that compromise was necessary to secure utility cooperation in successfully implementing a competitive retail market.

## Key Features of Illinois' Electricity Restructuring

The Illinois General Assembly took careful note of the stakeholders' work and forged a comprehensive legislative package designed to accommodate a measured transition from monopoly to competition. The General Assembly provided goals and direction but placed substantial reliance on the ICC to implement the transition and to make a wide range of decisions in doing so.

The Electric Customer Choice and Rate Relief Act of 1997 provided for the following transition mechanisms:<sup>19</sup>

### Transition Period

The "mandatory transition period" was originally set to terminate at the end of 2004, for a total seven-year schedule. While most aspects of the transition proceeded at a considerably more accelerated pace than originally anticipated, the General Assembly ultimately extended the symmetrical rate freeze and transition charge features of the program through 2006.

### Customized Utility Conditions

In recognition of the differing conditions among the utilities operating in Illinois in size, rate levels and service territories, some of the transition conditions, including the level of mandated rate reductions, were customized in order to assure utility cooperation for a smooth movement to customer choice.

### Preparatory Regulatory Proceedings

In the nearly two-year period from enactment to the commencement of customer choice phase-in, the ICC reviewed and approved the unbundling of utility rates to yield specific delivery service rates for customers electing competitive supply. The ICC also determined rules for the interactions and information exchange between alternative retail electric suppliers and delivery utilities.

### Phased Eligibility

Competitive choice commenced October 1, 1999. Customers with over four megawatts (MW) of demand and customers with a total demand of at least 9.5 MW at multiple locations were automatically eligible. Further, one-third of the aggregate load of other larger commercial and industrial customers could qualify for competitive service by selection in a lottery for which customers could register. Subsequent eligibility tranches in June and October 2000 would qualify all non-residential customers as eligible for choice. By May 2002, all customers, including residential, would be eligible.

### Residential Reduction and General Rate Freeze

The widely differing rate levels across the state's utilities warranted commensurately differing mandated reductions in residential rates in order to assure that small customers would realize the benefits of restructuring. Starting in August 1998, these reductions ranged between 1.7% and 15%, with the higher figure applying to the vast majority of residential consumers in the state. In 2001, residential rates for the great majority of the state's residential customers, who were served by ComEd in Northern Illinois, were reduced an additional 5%. In 2002, the General Assembly extended the freeze for two additional years to the start of 2007, with reductions for the residential customers of downstate utilities Illinois Power (5%) and Central Illinois Light (1%), both now part of the Ameren group of companies.

### Unbundled Delivery Service Rates

Given that traditional electric utility rates were bundled and did not break out the costs for specific functions and services, new cost-based delivery service rates were developed by the utilities and reviewed by the ICC. Customers could choose to buy only delivery services from the local utility while securing supply from alternative providers.

### Competitive Transition Charges (CTC )

A Competitive Transition Charge (CTC) to compensate utility investors for above-market power plant investments or "stranded costs" was assessed during the transition period on customers choosing alternative suppliers. The CTC was designed to maintain the financial condition of electric utilities during the migration of customers to market-based supply and to fairly compensate their investors for investments made in power plants under traditional regulation. The transition charge was recovered through a kilowatt hour add-on to delivery services bills.

### Mitigation Factor

In recognition of the value provided to utilities for the significant new business opportunities, risk reduction, organizational flexibility and cost control opportunities provided by the restructuring law, the CTC gradually would be reduced during the transition until termination of the CTC at the conclusion of the transition period.

### **Power Purchase Option (PPO) and Provider of Last Resort (POLR)**

The Power Purchase Option (PPO) would be an alternative power supply product offered by utilities to jump-start the competitive market in its early stages and as a backstop later on if the market were to falter. The PPO would prove important in easing customers into the market but would later prove unneeded as a safety net. The local utility would have the role of Provider of Last Resort (POLR) to assure that customers who did not choose an alternative supplier would still have the guarantee of an energy supply.

### **Utility RTO Membership**

Only the year before Illinois' restructuring law, in 1996, FERC issued orders paving the way for the development of independent system operators (ISO) along competitive lines. The framers of the Illinois restructuring law had the foresight to require Illinois utilities to participate in an ISO of their choosing. The ISOs evolved into the Regional Transmission Organizations (RTO) that now operate large, highly competitive wholesale markets for generation and related ancillary transmission services.<sup>20</sup>

### **Alternative Retail Electricity Suppliers (ARES)**

The law established licensing requirements for ARES to be administered by the ICC. While liberal enough to attract new competitive suppliers, the rules provided customers with reasonable assurances of adequate ARES financial depth and substantive capabilities ensuring that they could confidently do business with a new category of electricity players. Utilities were automatically approved to engage in the supply business outside their own delivery service territories.

### **Competitive Declarations**

Utilities were authorized to petition the ICC for declarations that tariffed service to a defined customer class had sufficient competition that the utility could discontinue the tariffed service obligation within three years. Generally, the requirement was that a competitive declaration was justified once 33% of load was being served competitively and customers had a choice of at least three competitors other than the utility.

### **Utility Industry Reorganization**

Utilities and utility holding companies in the state were given wide latitude to reorganize, merge with out-of-state companies, divest or spin-off generation and to otherwise create affiliates or subsidiaries in order to adapt to the new competitive environment.

### **Utility Tax Revision**

In order to hold state revenues harmless, the gross receipts tax on electric utilities was revised to take account of the fact that an increasing share of supply would be purchased from non-utility firms. The new tax basis would be anchored on the amount of energy delivered by the utility to end-use customers, with accommodations to assure that larger energy users would not be disproportionately burdened.

“Electricity at our refinery is one of our biggest expenses, which is also true for many large industrial plants in Illinois. The competitive marketplace has worked by decreasing the cost for industrial users which helps us to be competitive in the industry. It's one of the best things the Illinois legislature has done in the past fifteen years.”

~John Van Der Molen, Energy Procurement Manager,  
Marathon Petroleum Company, Robinson, Illinois.

## Customer Choice and the Competitive Market in Illinois

Utilities, customers, regulators and new industry participants responded promptly and enthusiastically. The initial ICC proceedings to set cost-based delivery rates, customer eligibility rules and the interaction of utilities and ARES were heavily litigated and there were some significant disagreements between customers and utilities. However, by the time the first competitive power flows commenced on October 1, 1999, the rules, risks and rewards were clear enough that the initial limit of one-third of the load of larger customers eligible for service under choice contracts was fully-subscribed.

The combination of low market prices for electricity available through ARES, the availability of the PPO at a market price estimated by the ICC and the mitigation reduction factor applied to the CTC provided an average savings for business customers of 7-10% compared to bundled utility rates. Further, business customers found that bilateral transactions with ARES—even at the earliest stages of customer choice—were reasonably easy and low cost. Energy purchasing consultants also helped customers to access the market.

Within just a few years, a century-old framework of vertical monopoly was transformed. The monopoly wires network became a way for customers to connect with competitive suppliers rather than serving as means of assuring a captive customer base for utility-owned generation.

### Competitive Generation

By the end of 2002, nearly all of the electric generation plants of investor-owned utilities operating in Illinois had been sold to independent power production companies or spun-off to generating affiliates of the utilities. In addition to the divestment and spin-off of generation, there was a significant inflow of investment for new, natural gas-fired independently-owned power stations. Called “peakers” at the time, many of these generating units now operate for extended periods due to the low prices of natural gas. A number of older, less efficient power plants—some fossil and several nuclear—have been closed. Figure 4 shows that, between 1997 and 2011, total nameplate installed generating capacity in Illinois increased by more than 11,000 megawatts or 30%, more than any other state in the region.

Figure 5 shows that in addition to adding generating capacity, Illinois capacity factors have improved dramatically while those of the other four states in the region have fallen.<sup>21</sup>

In 1997, Illinois power plants generated just about enough energy to equal total in-state consumption and line losses, less than 25% of the total power produced in the region. By 2011, as shown in Figure 6 Illinois had become the key exporter of electricity in the Upper Midwest, generating substantially more energy than required for internal consumption and accounting for almost 32% of the region's total generation. Indiana, Michigan and Ohio all saw their shares of the generation market fall, while Wisconsin's increased from just over 9% to 10%.

**Illinois Generation Grows and Becomes More Efficient**

State	Nameplate Capacity (MW)		Pct. Change
	1997	2011	
Illinois	38,132	49,739	30%
Ohio	28,936	36,305	25%
Indiana	23,363	30,765	32%
Michigan	27,255	33,066	21%
Wisconsin	12,750	20,030	57%
<b>Total</b>	<b>130,436</b>	<b>169,905</b>	<b>30%</b>

Figure 4: Generating capacity development 1997-2011 in five Upper Midwest industrial states

State	MWh Production per MW Capacity		Capacity Factor	
	1997	2011	1997	2011
Illinois	3,544	3,983	40%	45%
Ohio	4,935	3,764	56%	43%
Indiana	4,911	3,949	56%	45%
Michigan	3,925	3,309	45%	38%
Wisconsin	4,032	3,322	46%	38%

Figure 5: Upper Midwest average generation fleet capacity factor by state

### Corporate Reorganization, Mergers and Acquisitions

Coincident with the migration of generation to the competitive market, Illinois utilities also were rapidly restructuring their corporate structures. Unicom, the holding company of ComEd, merged with PECO (Philadelphia Electric Company) to form Exelon, which in 2012 merged with Constellation Energy, the holding company for Baltimore Gas & Electric. Exelon now has the largest nuclear fleet in the United States—with all of the plants out of utility rate base and operating entirely in the competitive market. Exelon's nuclear portfolio accounts for about 20% of the nation's nuclear generating capacity. The three major downstate utilities—CILCO, CIPS and IP—in individual transactions were acquired by St. Louis-based Ameren which also had operations in the Metro East area through its Union Electric subsidiary. Other smaller utility firms also merged into larger energy groups. The 1997 law generally allowed these transactions to proceed with minimal regulatory delay or conditions so that utilities could more promptly streamline operations and achieve efficiencies.

### New Competitors

The licensing process for alternative retail electricity suppliers (ARES) has functioned smoothly. In 2013 there were more than 80 firms holding permits from the ICC to sell electricity to retail customers.<sup>22</sup> Utilities are allowed to serve supply outside their franchised delivery service areas. All of these competing enterprises, generally Retail Electric Suppliers (RES), provide customers of all types and sizes with access to a range of service options. Further, the General Assembly in 2007 authorized local governments, through voter referendum, to establish municipal aggregation programs to bring competitive supply to their own residential customers. Hundreds of localities, including the city of Chicago, have opted for “muni agg.” Also in 2007, the General Assembly created the Illinois Power Agency (IPA) which would largely displace utilities in the competitive procurement of supply used by utilities as a default provider to serve those residential and small business customers who have not contracted with an ARES or who are served under muni agg programs.<sup>23</sup>

### Customers Have Switched to Competitive Supply

In keeping with the general pattern of competitive development in other regulated network industries, larger and more sophisticated customers entered the competitive arena in the earlier stages. Industrial and larger commercial customers switched in large numbers within just a couple of years of the commencement of customer choice. They were followed in increasing numbers by non-residential customers with smaller loads. From the end of 2003, the portion of total retail electricity sales volume in Illinois accounted for by non-utility providers grew from just over 15% to about 80% by the third quarter of 2013.<sup>24</sup> In 2007, in light of the extensive development of competitive alternatives, the General

### Illinois: Now a Net Exporter of Electricity

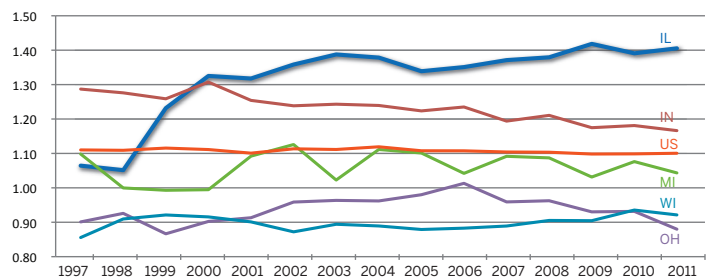


Figure 6: Upper Midwest states' production-to-consumption ratios 1997–2011

By 2011, Illinois had become the key exporter of electricity in the Upper Midwest, generating substantially more energy than required for internal consumption and accounting for almost 32% of the region's total generation.

“Aggregating residential and small business customers has meant that communities can negotiate attractive prices and at the same time buy a larger percentage of green energy—something that a majority of residents in many communities want.”

~Craig Schuttenberg, Energy Choices

Assembly provided a timetable for automatic competitive declarations for most non-residential load, contributing further to the development of the market. During the first decade of retail competition residential customers rarely purchased supply from ARES. Most were supplied with market-priced power procured by utilities, and later through the IPA, in processes overseen by the ICC. Residential customer choice has expanded greatly since 2011. In addition to municipal aggregation programs, utilities may purchase receivables from ARES and provide consolidated billing.<sup>25</sup> Figure 7 illustrates the migration of electricity load in Illinois since 2003, by which time all customers were eligible for choice.<sup>26</sup>

**Competitive Market Prices**

It is little wonder that so many customers have opted into the competitive market in electricity: Illinois electricity prices are now among the lowest in the nation rather than among the highest. Figures 8 and 9 show the dramatic improvement in Illinois’ average price of delivered electricity in recent years compared to the other four Midwest industrial states and the region as a whole. Illinois prices have decreased at the same time that prices in the other states in the region have increased. Rates in Indiana, Michigan and Wisconsin, where customer choice is either prohibited or severely limited, have risen rapidly. In Ohio, rates have flattened out as the state has embraced competition.<sup>27</sup>

Illinois prices declined while other regional states’ prices have risen.

**Residential Customers Are Following Business Customers to the Market**

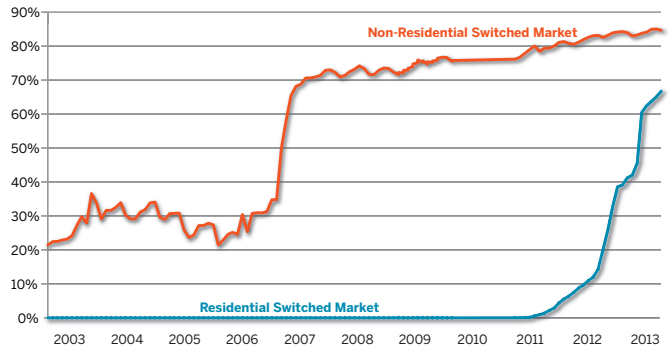


Figure 7: Most Illinois electricity load is served by non-utility suppliers.

**Illinois Prices—Once the Region’s Highest—Are Now the Lowest**

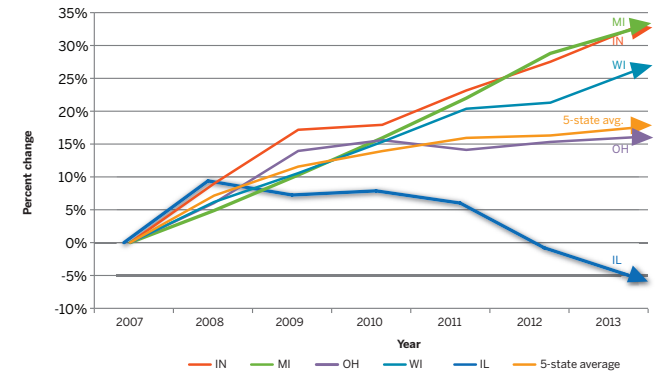


Figure 8: Cumulative percentage change in average electricity prices 2007–2013

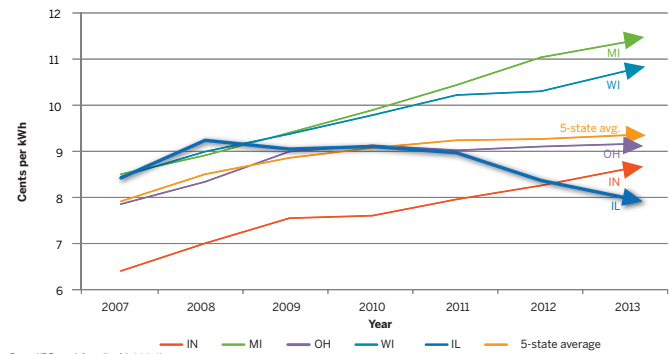


Figure 9: Illinois prices, once the region’s highest, are now the lowest.



## Looking Ahead: Lessons of Electricity Industry Restructuring in Illinois

An important element in the overwhelming success of customer choice has been the direct involvement of Illinois' business organizations. The Illinois Retail Merchants Association, the Illinois Manufacturers' Association, the Illinois Chamber of Commerce and other business organizations were active participants in the original legislation and during the various stages of implementation. Business organizations across the state have been involved in marketing attractively-priced electricity supplies from membership affinity programs.

During a stressful economic period that began in 2008, Illinois businesses and residents have had the benefit of competitive electricity prices that convey accurate price signals about the supply/demand imbalance and the significant decline in natural gas prices due to rising supplies from the shale gas revolution.

Illinois' experience with the implementation of competition and customer choice in gas and electricity supply may provide a model for the forging of other successful public policies through cooperation among stakeholders, adherence to sound principles of market economics and professional regulation and administration.

Over the course of the transition to competitive electricity in Illinois, there has been significant improvement in the state's price position relative to the national average price of electricity. In the years prior to the introduction of customer choice, average Illinois electricity prices were well above the national average, consistently on the order of a 10% premium. In the years following however, average Illinois prices have been well under the national—on average about a 9% discount.<sup>28</sup> The cumulative difference between Illinois' actual rates and the price level if Illinois had maintained its long-running prior relationship to national average prices constitutes **\$37 billion** in savings.

In addition, electricity customers are increasingly realizing the benefits of innovative products and services developed by the many competing suppliers. The gradual deployment of "smart grid" technology by Illinois utilities will magnify these benefits and elicit more innovations on both sides of the electricity meter.

The policies that led to these results were forged in the atmosphere of a shared conviction that larger economic and energy markets conditions were changing in ways that old regulatory models were ill-suited to address. Illinois chose to adapt by looking ahead and making big reforms in both gas and electricity rather than to hope that incrementalism would constitute a successful strategy.

Illinois' leadership and the commitment of more than a dozen other jurisdictions to the implementation of effective customer choice can serve as a model for other states considering how to adapt to rapidly-changing energy conditions that may be more profound than those that spurred Illinois' original movement to a competitive retail gas and electricity markets. Electricity competition and customer choice are no longer merely theoretical or speculative: they are proven policies that have delivered billions of dollars in savings to Illinois' economy.

For Illinois policymakers and for the people of Illinois, the success of the state's gas and electricity reforms should serve as an example of how important questions can be addressed to build a better future.

"The competitive electricity marketplace is still evolving, but there is no doubt it has been popular with residential and commercial customers alike. People are embracing choice in electricity suppliers both to save money and act on their personal values. My hometown of Oak Park, for example, was the first municipality in Illinois to require its supplier to provide all-green power options for residents and small business operators."

~ Illinois State Senator Don Harmon

## 14 Electricity & Natural Gas Customer Choice In Illinois—A Model For Effective Public Policy Solutions

<sup>1</sup>The shale gas revolution of the past several years appears to be transforming a number of northern states that formerly were mainly gas-importing states into major gas-producing states. With the 2013 enactment of Illinois' shale gas regulatory law and the commencement of rulemaking under that measure, it remains to be seen if Illinois shale formations will yield the large quantities of gas now being produced in Pennsylvania, for example.

<sup>2</sup>Illinois, Indiana, Michigan, Ohio and Wisconsin have long been treated by the United States Census Bureau, the U.S. Energy Information Administration and other federal agencies as the "East North Central" geographic division for reporting of a vast array of economic and demographic data. The geographic proximity of the states clustered around the largest of the Great Lakes and the participation of their electric utilities in the same wholesale markets allow for reasonable comparisons of electricity prices over time. The five states also have significant industrial and agricultural sectors as well as similar weather.

<sup>3</sup>The Illinois Electric Service Customer Choice and Rate Relief Act of 1997 (220 ILCS 5) was added to the Illinois Public Utilities Act by near-unanimous votes on HB 362 in the Illinois General Assembly.

<sup>4</sup>The price data in the report are drawn from the database maintained by the Energy Information Administration (EIA), the statistical arm of the U.S. Department of Energy. EIA's Electric Power Monthly can be found at <http://www.eia.gov/electricity/monthly/>.

<sup>5</sup>A series of measures passed by the Illinois General Assembly in 2011, 2012 and 2013 provided a regulatory framework for the anticipated investment of \$3 billion over the coming decade in grid hardening and deployment of smart grid technology, including advanced metering, that can provide customers of all types with real-time and in-depth information on energy usage.

<sup>6</sup>In the decade after 1977, when about 17% or US GDP was produced by fully-regulated industries, more than 10 points were slashed from that figure such that by 1988 only about 6.6% of GDP was accounted for by such businesses. See "Regulation and Investment", Alberto Alesina et al, National Bureau of Economic Research, Working Paper 9560, March 2003 at [http://www.nber.org/papers/w9560.pdf?new\\_window=1](http://www.nber.org/papers/w9560.pdf?new_window=1). Robert Crandall of The Brookings Institution estimated in a 2007 paper that, even without the inclusion of extensive wholesale and retail electricity price deregulation, the overall reduction in economic regulation in the United States was only about one-fourth that prior to the later 1970s. See "Extending Deregulation" by Robert W. Crandall, The Brookings Institution, February 2007 at <http://www.brookings.edu/research/papers/2007/02/28useconomics-crandall-opp08>

<sup>7</sup>EIA data recording generation by independent power producers begins in 1990 and shows that in that year IPPs produced only 1% of total net generation in the United States. By 1996, prior to the first electricity customer choice laws, the percentage had risen to 1.7% but, due in great part to the divestment and spin-off of power plants by utilities, soared to 34% in 2012. See EIA report Net Generation by State by Producer of Energy 1990-2012 at <http://www.eia.gov/electricity/data/state/>.

<sup>8</sup>The average price of gas supply reported by EIA for residential customers in Illinois for 1983 was \$5.46 per thousand cubic feet compared to \$2.50 for 1978 at [http://www.eia.gov/dnav/ng/ng\\_pri\\_sum\\_dcu\\_sil\\_a.htm](http://www.eia.gov/dnav/ng/ng_pri_sum_dcu_sil_a.htm).

<sup>9</sup>For a brief history of the evolution of natural gas see <http://www.naturalgas.org/regulation/history.asp> at the website maintained by the Natural Gas Supply Association.

<sup>10</sup>Alternative gas suppliers are licensed by the Illinois Commerce Commission under Section 19-100 of the Illinois Public Utilities Act and Part 551 of the Illinois Administrative Code which can be found at <http://www.ilga.gov/legislation/ilcs/ilcs4.asp?ActID=1277&ChapterID=23&SeqStart=43000000&SeqEnd=44300000> and <http://www.ilga.gov/commission/jcar/admincode/083/08300551sections.html>

<sup>11</sup>A map of average electricity prices by state for 1998 shows that Illinois had the 13th highest average price per kilowatt hour. See "Electricity Restructuring: Deregulation or Reregulation?" by Severin Borenstein and James Bushnell, Regulation, Summer 2000, Vol. 23, No. 2 at <http://www.cato.org/regulation/summer-2000>

<sup>12</sup>The most notable of these orders was Order No. 888 which addressed in nearly 800 pages the background and rationale for dramatic change in the regulation of the wholesale electricity business. <http://www.ferc.gov/legal/maj-ord-reg/land-docs/rm95-8-00w.txt>.

<sup>13</sup>In 1985, the ICC issued a series of papers addressing a variety of regulatory matters during the General Assembly's "sunset" consideration of reforms to the Illinois Public Utilities Act. Several of these papers advanced some of the first proposals in the country for greater reliance on market forces and customer choice in electricity.

<sup>14</sup>A number of states (Arizona, California, Michigan, Montana, Nevada, Oregon and Virginia) undertook partial transitions to industry restructuring and customer choice, but eventually reverted largely to the *status quo ante*. In some states, such as California and Michigan, some customers are able to access competitive supplies while most are not. Several other states (Arkansas, New Mexico, Oklahoma and West Virginia) took initial regulatory steps but never actually allowed choice. For detailed state-by-state restructuring information see [http://www.eia.gov/electricity/policies/restructuring/restructure\\_elect.html](http://www.eia.gov/electricity/policies/restructuring/restructure_elect.html).

<sup>15</sup>This map represents an interpretation of state-by-state regulatory status based on a variety of sources, including information from the Energy Information Administration that provides a comparable restructuring status map at [http://www.eia.gov/electricity/policies/restructuring/restructure\\_elect.html](http://www.eia.gov/electricity/policies/restructuring/restructure_elect.html).

<sup>16</sup>See EIA Electricity Power Monthly Table 5.4.B for state-by-state electricity consumption at <http://www.eia.gov/electricity/monthly/index.cfm?src=Electricity-f3>

<sup>17</sup>The international consulting firm DNV GL relies on reports by state regulators to closely track competitive supply volumes purchased by customers eligible for choice in each state that has some degree of customer open access. The competitive volumes reported in the states by EIA can be used with DNV GL data to make ongoing calculations of total market share for competitive supply. In most states that have fully embraced customer choice, utilities have generally divested or spun-off their generation and no longer control production facilities. Utility supply for customers not choosing an alternative provider is customarily procured in the market and priced competitively. The Illinois Power Agency conducts the procurement process for supply provided by utilities for the rapidly contracting portion of residential customers not served by alternative providers or through municipal aggregation programs. Such suppliers are sometimes called default service or 'provider-of-last resort' (POLR).

<sup>18</sup>This map was prepared by the COMPETE Coalition, an organization advocating competitive electricity markets and can be found at <http://www.competecoalition.com/about>. Other similar maps are produced by EIA and various industry organizations.

<sup>19</sup>A detailed summary of the 1997 Electric Service Customer Choice and Rate Relief Act of 1997 (HB 362) was prepared by the Illinois Citizen Utilities Board (CUB) and can be found at <http://www.citizensutilityboard.org/ciElecSumILHB362.html>.

<sup>20</sup>The six ancillary transmission services identified by FERC and subject to federal oversight are: scheduling and dispatch, reactive power and voltage control, line loss compensation, load following, system protection and energy imbalance.

<sup>21</sup>Capacity factor is the percentage of actual megawatt hours produced by a power plant relative to its potential production capability. Some plants operate most of the time to meet base load requirements while others produce power during fewer hours of the year to meet periods of greater demand such as during the summer when cooling demand is substantial.

<sup>22</sup>The Illinois Commerce Commission monthly updates the list of certified Retail Electric Suppliers (RES) at <http://www.pluginillinois.org/Suppliers.aspx>

<sup>23</sup>The Illinois Power Agency was created partly in reaction to dissatisfaction with the results of the first "reverse auction" procurement conducted in late 2006 in anticipation of the end of the rate freeze on January 1, 2007. The procurement, constrained by the legal requirements in place at the time, was conducted at a time when market prices had risen. It is notable that the General Assembly, rather than pulling back from customer choice and competition, actually accelerated the expansion of competitive markets in Illinois. The full text of the law can be found at <http://www.ilga.gov/legislation/95/SB/PDF/09500SB1592lv.pdf>

<sup>24</sup>The Illinois Commerce Commission provides monthly reports from each utility detailing numbers of customers and electricity volumes served under various supply arrangements at <http://www.icc.illinois.gov/electricity/switchingstatistics.aspx>

<sup>25</sup>Local utility purchase of receivables (PoR) due to ARES from their residential customers can be elected by an ARES, with the ICC setting the discount rate. These accounts can then be invoiced to the customer in a utility consolidated bill (UCB) that reflects both the delivery service charges and the supply price contracted by the customer with the ARES.

<sup>26</sup>The small percentage of Illinois electricity customers served by rural cooperatives and municipal utilities are not covered by the customer choice law.

<sup>27</sup>Ohio enacted electricity restructuring legislation in 1999, but not until just the past several years had not fully implemented customer choice. Recently, large numbers of business customer have accessed the market and numerous communities have entered the market through Ohio's municipal aggregation program. Michigan passed a restructuring law in 2000. A variety of barriers inhibited development of the market, and in 2008 a new law limited competitive access to just 10% of total electricity load. Many business customers are now in the position of being on a waiting list for access because the 10% quota has been fully subscribed. Wisconsin and Indiana have never enacted restructuring laws.

<sup>28</sup>See "Regulation and Relevancy: Assessing the Impact of Electricity Customer Choice" by John L. Domagalski and Philip R. O'Connor in Electricity Policy, January 2013 at <http://www.competecoalition.com/files/O'Connor-Domagalski%20-1-17-13.pdf>







# Evolution Of The Revolution:

## *The Sustained Success Of Retail Electricity Competition*

Philip R. O'Connor, Ph.D and Erin M. O'Connell-Diaz

July 2015

*After more than a century of a universally accepted vertical monopoly model, the idea of retail electricity competition (“Customer Choice”) that emerged in the 1980s was indeed revolutionary. To succeed, a revolutionary idea must evolve to reflect changed conditions and lessons learned. Measured against objective criteria over almost two decades, Customer Choice has met that test.*

At the outset, Customer Choice opponents claimed retail electricity competition would increase prices and price volatility and decrease generation investment and electric reliability. The empirical data demolish those claims, showing instead that, whenever allowed, consumers enthusiastically embrace Customer Choice:

- Customer Choice is thriving in 13 states and the District of Columbia, which have full access (“Customer Choice Jurisdictions”).
- From 2003 to 2013, in the 14 Customer Choice Jurisdictions, accounts served with supply from competitive suppliers rather than with power supply from local delivery utilities, **grew by 524% for Commercial and Industrial (“C&I”) customers and 636% for residential**, totaling 19 million customer accounts by year-end 2013.
- From 2003-2014, in the 14 Customer Choice Jurisdictions **electrical load served by competitive suppliers grew dramatically even in an era of overall flat growth in electricity consumption: 181% for C&I and 673% for residential** – accounting for 20 of every 100 kilowatt hours sold in the contiguous United States.
- Competition era price trends in the Customer Choice Jurisdictions have been more favorable to customers than price trends in the 35 traditional monopoly regulation jurisdictions (“Monopoly States”), with **average electricity prices falling against inflation in Customer Choice Jurisdictions, but far exceeding inflation in Monopoly States.**
- Customer Choice Jurisdictions, as a group, have outperformed Monopoly States in generation, attracting billions of dollars of investment in new, more efficient generation, **resulting in higher capacity factors than in Monopoly States** and parity in resource adequacy to meet load.

- The five states of the Industrial Upper Midwest offer a compelling intra-regional example of the success of Customer Choice, with the competitive states Illinois and Ohio outperforming the Monopoly States of Indiana, Michigan and Wisconsin with lower price trends and greater generation efficiency.

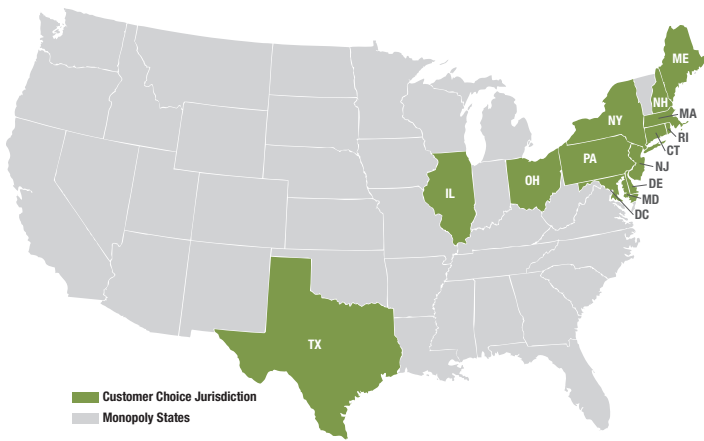
The data sources for this report are DNV GL (choice accounts and volumes) and the U.S. Energy Information Administration (prices, generation and consumption volumes)<sup>1</sup>.

## MEASURING CUSTOMER CHOICE

For nearly two decades, two retail electricity models (choice and monopoly), have operated in parallel in the United States<sup>2</sup>, thus allowing reliable comparison of the two models on key indicators.

The data demonstrate that the 14 Customer Choice Jurisdictions, which steadily adapted and expanded retail choice, compare favorably with, or outperform, the 35 Monopoly States which have so far rejected broad-based customer market access<sup>3</sup>. There has been sustained growth of Customer Choice both in number of accounts and electric load served by competitive providers. There has been substantial investment in generation and favorable generation performance trends in Customer Choice Jurisdictions. And price trends under Customer Choice have been more favorable to customers than in Monopoly States.

As shown in Figure 1, the 14 Customer Choice Jurisdictions<sup>4</sup>, which account for 1.2 Billion MWh in total annual consumption or 33% of contiguous U.S. electrical load, is concentrated in the northeastern quadrant of the country, with the notable exception of Texas.<sup>5</sup>



**FIGURE 1: THE 14 CUSTOMER CHOICE JURISDICTIONS:  
 1.2 BILLION MWH = 33% OF U.S.**

The 35 Monopoly States include five that in 2014 allowed only highly restricted Customer Choice, and two states that previously allowed restricted choice.<sup>6</sup> Comparative analysis of performance differences between the 14 Customer Choice Jurisdictions and the 35 Monopoly States would not be materially affected by treating these seven states separately. Moreover, as these seven states severely limit (or only briefly allowed) retail competition, their performance has been much more similar to that of the 28 Monopoly States that never allowed any retail choice than to performance of the Customer Choice Jurisdictions.<sup>7</sup>

**When Allowed, Customers Embrace Choice**

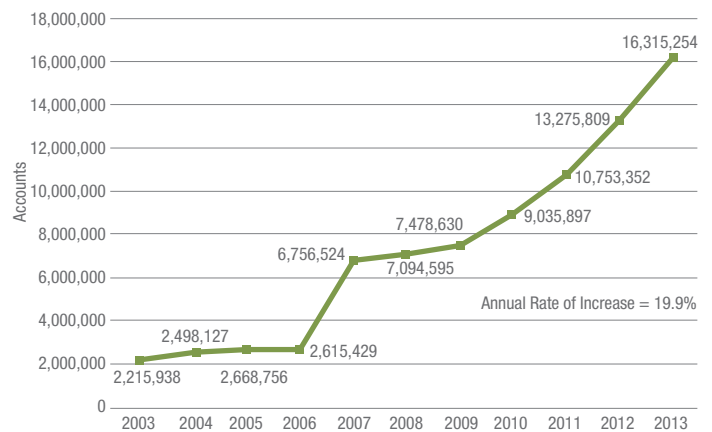
*19 Million Competitive Supplier Customer Accounts<sup>8</sup>*

By 2003, most of the 14 Customer Choice Jurisdictions had established the regulatory framework for retail electricity competition. For example, they had addressed significant legacy issues such as stranded costs; promulgated unbundled traditionally regulated delivery tariffs; developed default supply service (provider of last resort-POLR) rates; clarified switching rules; and implemented electronic data interchange standards for competitive suppliers and utilities. In these jurisdictions, retail competition continued to expand as competitive suppliers and customers rapidly gained experience, wholesale markets adapted and regional transmission organizations (“RTOs”) developed. Because of the significance of 2003, it is an appropriate year from which to measure year-to-year change.

At year-end 2013<sup>9</sup>, competitive suppliers served more than 19 million customer accounts in the 14 Customer Choice Jurisdictions, which include some of the most economically important states in the country as well as the seat of national government.

The number of competitive supplier customer accounts in the 14 Customer Choice Jurisdictions increased dramatically between 2003 and 2013, growing by 16.4 million, a 617% increase.<sup>10</sup> As shown in Figures 2a and 2b, competitive residential accounts grew by 14.1 million or 636%, and C&I by 2.3 million or 524%. These increases represent average annual compounded growth rates of 19.9% for residential and 18.1% for C&I. Once full-year 2014 figures are available, accounts served by competitive suppliers likely will exceed 20 million.

**FIGURE 2a: RESIDENTIAL CUSTOMER CHOICE ACCOUNTS: 14.1 MILLION, 636% INCREASE 2003-13**



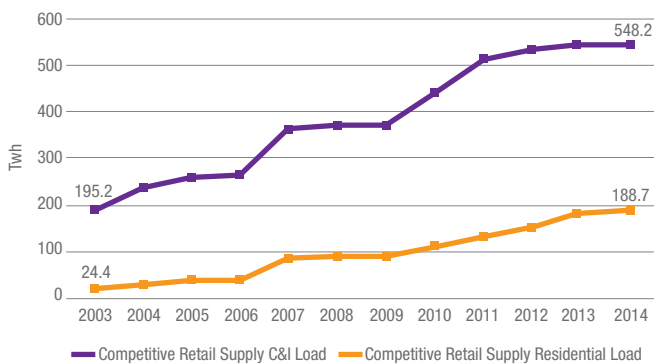
**FIGURE 2b: C&I CUSTOMER CHOICE ACCOUNTS: 2.3 MILLION, 524% INCREASE 2003-13**



### The Customer Choice Power Surge

In 2014 in the 14 Customer Choice Jurisdictions, competitive suppliers served 737 million MWh of load, an increase of 235% from 220 million MWh in 2003.<sup>11</sup> As shown in Figure 3, load growth has not been confined to C&I, rather government, non-profit and residential customers have also opted for choice of supplier and market pricing and product diversity not available under traditional monopoly tariffs. From 2003 to 2014, residential load served by competitive suppliers in the 14 Customer Choice Jurisdictions grew 673%, from 24 million MWh to 189 million MWh, as competitive C&I volume grew by 181%, from 195 million MWh to 548 million MWh.

**FIGURE 3: CUSTOMER CHOICE LOAD SURGE: 2003-2014**  
**RESIDENTIAL: 165 MILLION MWh, 673% INCREASE**  
**C&I: 353 MILLION MWh, 181% INCREASE**



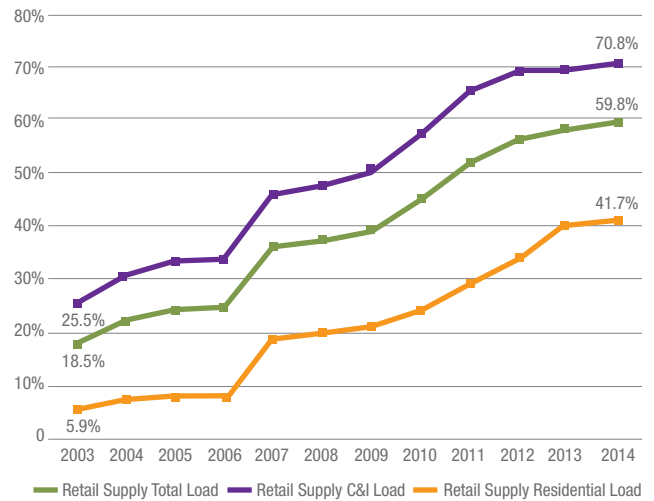
### Competitive Suppliers Serve 60% of Load in Choice Jurisdictions = 20% of National Load

In 2014, competitive suppliers directly served nearly 60% of the total load of more than 1.2 billion MWh in the 14 Customer Choice Jurisdictions. Most of the other 40% of load was served by utilities with market priced supplies obtained through competitive procurement overseen by state regulators.<sup>12</sup>

Figure 4 shows that in the 14 Customer Choice Jurisdictions customer total load served by competitive providers more than tripled, growing from just 18.5% of total load in 2003 to 59.8% in 2014. C&I load served by competitive providers grew from 25.5% to 70.8% and the residential share from 5.9% to 41.7%. For all the 48 contiguous states and the District of Columbia, these

volumes translate into 20% of total load, 24% of all C&I load and 13.5% of all residential. These increasing volumes of competitive supply underscore the success of Customer Choice in becoming a substantial and sustainable feature of the American electricity landscape.

**FIGURE 4: PERCENTAGE OF LOAD IN 14 CUSTOMER CHOICE JURISDICTIONS SERVED BY COMPETITIVE SUPPLIERS**



### Customer Choice Has Even Gained Market Share in a Flat Electricity Sector

One key measure of the vitality of Customer Choice is its ability to grow and increase market share even though overall electricity demand has been flat or declining. By that measure as well, Customer Choice is a stunning success.

A central feature of the electricity industry in the United States in recent years has been low average annual growth in grid-delivered supply. Since 1997, total retail load in the 48 contiguous U.S. states and the District of Columbia grew by 18.5%. However, this compounded average growth rate of less than 1% yearly over 17 years does not tell the full story. The growth in electricity consumption has been decelerating in each successive period since 1997, finally flatlining after 2008. Figure 5 shows the radically different growth trends in continental U.S. electricity consumption and in competitive load in the 14 Customer Choice Jurisdictions within that otherwise flat sector.



**FIGURE 5: 1997–2014 LOAD GROWTH IN 14 CUSTOMER CHOICE JURISDICTIONS COMPARED TO OVERALL LOAD GROWTH IN THE CONTIGUOUS UNITED STATES**

% Change U.S. Total MWH	% Change	Competitive Supplier Served Load
1997–2003 (6 years)	11.1%	From Near-Zero to 220 Million MWH
1997–2014 (17 years)	18.5%	From Near-Zero to 737 Million MWH
2003–2008 (5 years)	6.9%	110.3%
2003–2014 (11 years)	6.7%	235.6%
2008–2014 (6 years)	–.14%	59.6%

### Measuring Price Performance

Opponents of Customer Choice attack competition by highlighting that average electricity prices for the Customer Choice Jurisdictions exceed those for the Monopoly States. This misplaced criticism ignores a basic reality. Long before retail competition commenced, the weighted average price of electricity in the 14 Customer Choice Jurisdictions was higher than in the Monopoly States. In New England and the Mid-Atlantic States in particular, urbanization, long distances from fuel sources, high wage and tax levels and more restrictive environmental rules had produced higher underlying cost structures and higher prices than in most states in other regions. In the 1970s and 1980s, large power plant construction programs in a period of historically high combined inflation and interest rates and increasing nuclear regulations further exacerbated these longstanding higher price structures, precipitating the move to competition.

The proper focus, therefore, is not a snapshot of electricity prices but rather is a comparison between price trends in the Customer Choice Jurisdictions and the Monopoly States during the competitive era. Further, the comparison of price trends between the two groups of states should be considered on a standardized basis.

First, when comparing price changes between the two groups of states, average weighted prices should be used so as to remove the distortions associated with straight averages which fail to account for the significantly different volumes of sales in large and small states that may have quite different price levels.<sup>13</sup>

Second, price trends in the two groups of states ought to be analyzed on the basis of percentage changes in prices so as to remove the impact of initial prices. This allows for a better understanding of price performance in the period after the variable in question – ie. the form of regulation – has been differentiated between the two groups.

Third, adjusting for inflation removes the distorting impact of increased nominal gaps that may actually constitute smaller gaps on a percentage basis.

Under these proper and valid measures, the Customer Choice Jurisdictions have significantly outperformed the Monopoly States when compared as groups. When comparing a few individual states within a single region, however, such as the five similar states in the Industrial Upper Midwest, nominal prices are a more appropriate measure.

### *Prices in Customer Choice Jurisdictions Have Risen at Lower Percentage Rates Than in Monopoly States*

Percentage increases in average weighted prices in the 14 Customer Choice Jurisdictions have been far lower than in the 35 Monopoly States as shown in Figures 6 through 9. Favorable price performance under choice has benefitted all customer classes, contrary to opponents' claims that competition would benefit C&I customers to the detriment of residential customers.

Between 1997 and 2014, all-sector nominal weighted average prices in Customer Choice Jurisdictions rose by 41%, but rose by 60% in the Monopoly States (Figure 6).

When nominal prices are adjusted for inflation, average prices in the Customer Choice Jurisdictions fell against inflation, whereas prices in the Monopoly States rose at a rate higher than inflation<sup>14</sup> (Figure 7).

Between 2003 and 2014, all-sector nominal weighted average prices in the Customer Choice Jurisdictions rose 34% compared to 44% in the Monopoly States (Figure 8).

While all-sector average prices in both groups rose more quickly than general inflation, prices in Monopoly States rose at a premium to inflation three times greater than did prices in the Customer Choice group (Figure 9).

Overall, electricity in the Monopoly States accounts for a larger share of consumer cost of living in 2014 than in 1997, whereas in the Consumer Choice Jurisdictions electricity's share of the consumer pocketbook was less in 2014 than in 1997.

FIGURE 6: % CHANGE 1997–2014 AVERAGE WEIGHTED PRICES: CHOICE vs MONOPOLY

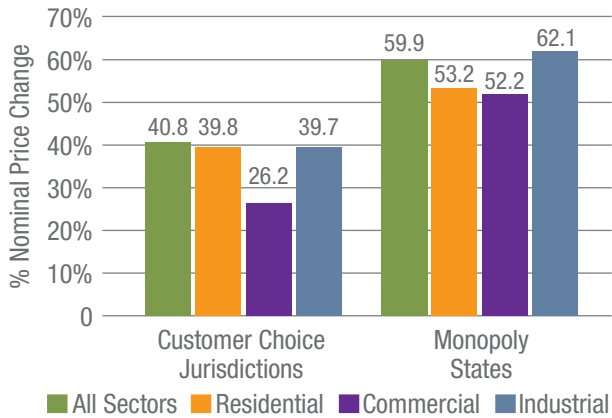


FIGURE 7: INFLATION ADJUSTED % PRICE CHANGE 1997–2014: CHOICE vs MONOPOLY

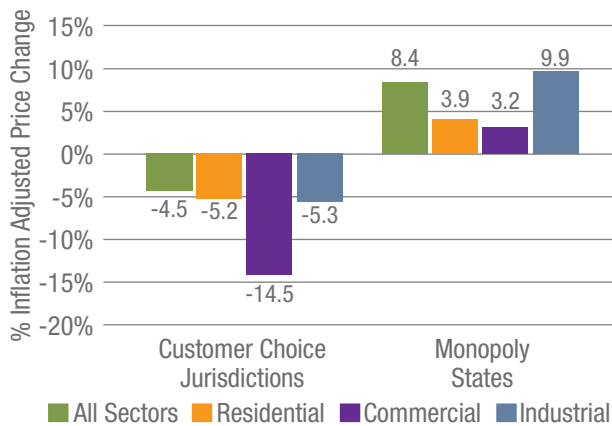


FIGURE 8: 2003–2014 % CHANGE AVERAGE WEIGHTED PRICES: CHOICE vs MONOPOLY

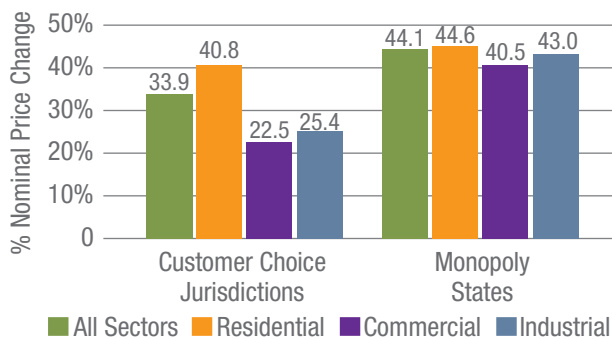
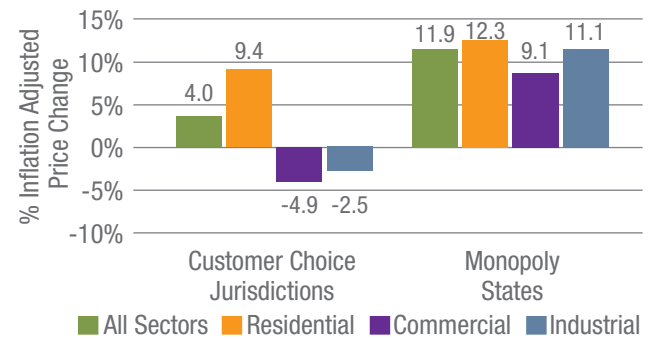


FIGURE 9: INFLATION ADJUSTED % PRICE CHANGE 2003–2014: CHOICE vs MONOPOLY

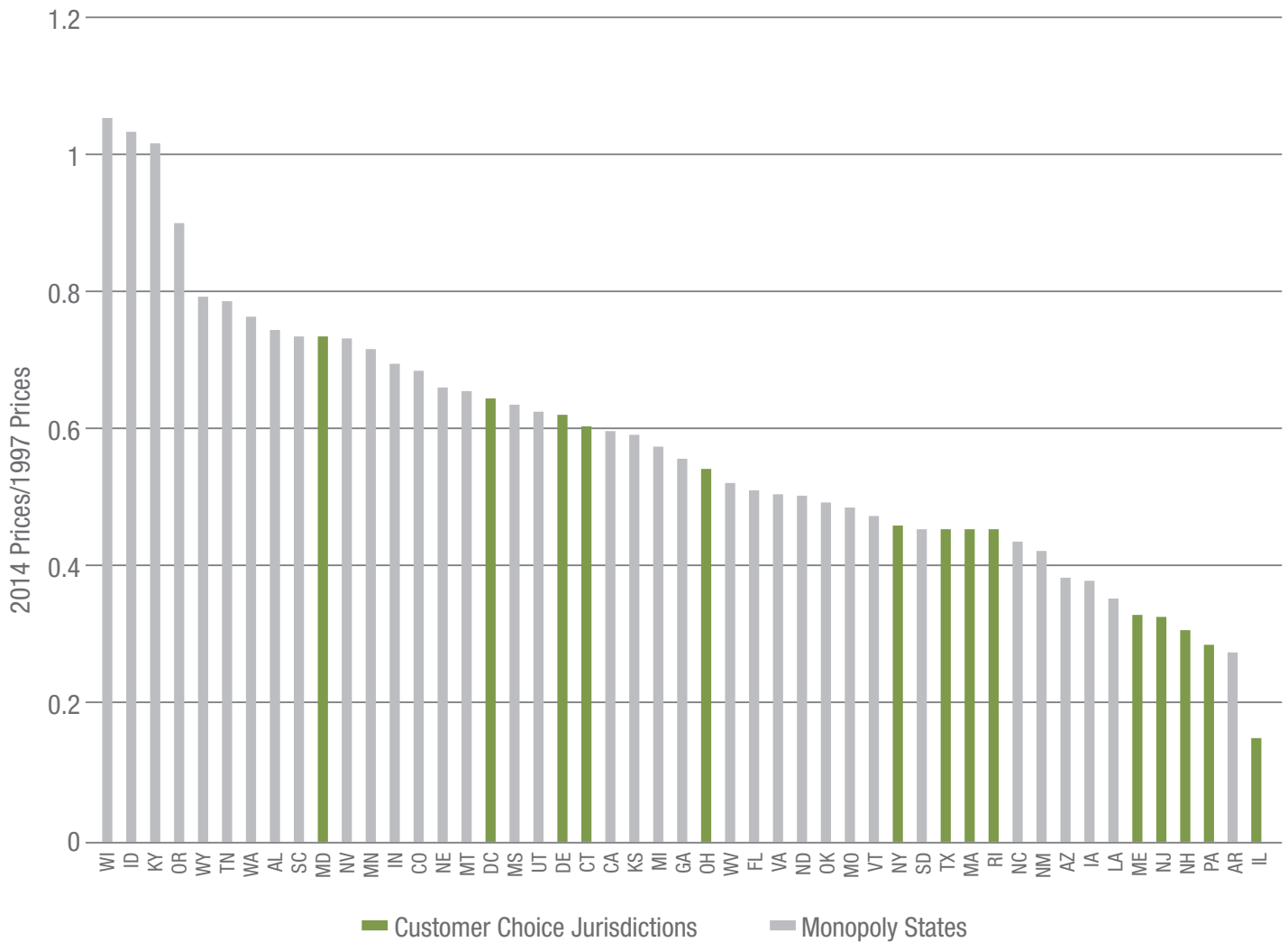


*Customer Choice Jurisdictions Cluster in the Lower Half of Price Increases From 1997-2014*

Notably, the lower percentage price increases in the Customer Choice Jurisdictions are not the result of large aberrational price reductions in just a few competitive states or of disproportionate price increases in a few large Monopoly States. Nor is the difference in price trends a function of using weighted average prices rather than straight average prices.<sup>15</sup>

Figure 10 shows the 48 contiguous U.S. states and DC ranked by percentage increase in all-sector nominal average price between 1997 and 2014. Ten of the 14 Customer Choice Jurisdictions are in the lower half of the distribution and nine are in the lower third. Most significantly, five Customer Choice Jurisdictions comprise the lowest six. Three of the four Customer Choice Jurisdictions in the upper half of the distribution (Maryland (10th), District of Columbia (17th) and Delaware (21st)) are in a shared footprint with longstanding transmission constraints which inhibit the flow of lower-priced resources from the west.<sup>16</sup>

FIGURE 10 : RANKING OF % INCREASE IN NOMINAL ALL-SECTOR AVERAGE PRICE 1997–2014



*Price Signals: Competitive Retail Prices Respond to Market Conditions*

In addition to moderating disadvantageous upward price trends, another price goal of electricity competition was to remedy traditional regulation’s inability to set generation prices that reflected supply and demand realities.<sup>17</sup> The price data confirm that competition has met this second goal as well.

Monopoly advocates often argue that competitive prices that reflect economic conditions disadvantage consumers and that electricity prices should instead be set administratively. Competitive electricity markets provide price signals through multi-year forward pricing and in real-time or other short-term prices. In marked contrast, traditional monopoly regulation administratively sets essentially

backward looking prices based primarily on sunk costs and intra-class uniform pricing. Economics and market realities drive competitive pricing; regulatory accounting and pricing principles established in far different conditions many decades ago drive monopoly regulation.

Competition opponents also assert that market-responsive price signals in the Customer Choice Jurisdictions would yield more volatile monthly retail prices compared to prices under traditional monopoly regulation. Actual experience also shows this assertion to be unfounded.<sup>18</sup>

The central problem with the traditional model of monopoly electricity pricing in a future characterized by low growth is that it inevitably results in higher per unit prices on shrinking sales volumes in order to cover fixed generation costs. This is the conundrum at the heart of

the much-discussed “utility death spiral.” During the early period of customer choice implementation, 1997-2003, transition rules provided stranded cost compensation for utilities and froze rates for several years for many residential and small business customers, and natural gas prices were low.

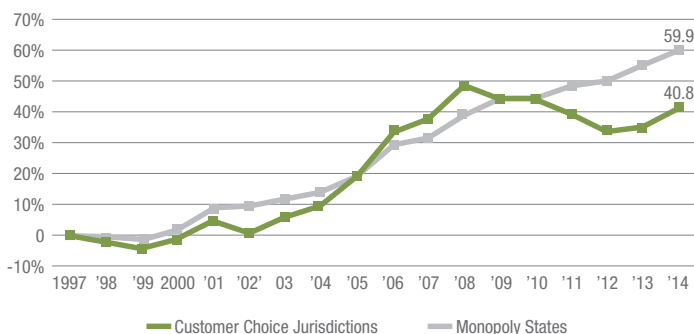
During much of the middle period, 2004-2009, the economy was booming and natural gas prices peaked in 2008 at an average city-gate price of \$9.18 per mmBtu, well more than double the \$4.12 price in 2002.<sup>19</sup>

In the later period, 2010-2014, electricity prices fell after the market collapse in late 2008 as expired electricity contracts were replaced during the recession and continuing economic weakness. Average city-gate gas prices in 2012, for example, were about half the 2008 peak period price.

Notably, average weighted retail electricity prices in the Customer Choice Jurisdictions in 2014 were actually lower than they had been in the 2008-2010 period, reflecting the market-responsive pricing behavior of the choice model.

Figure 11 shows 1997-2014 year-over-year cumulative percentage changes in weighted average prices for the Customer Choice Jurisdictions and Monopoly States. Under this price trend measure, Customer Choice Jurisdictions again outperformed Monopoly States: in Monopoly States such prices increased almost 60%, but only about 40% in Customer Choice Jurisdictions.

**FIGURE 11: 1997-2014 YEAR-OVER-YEAR CUMULATIVE AVERAGE WEIGHTED PRICE CHANGE CHOICE vs MONOPOLY**



Although, this report does not purport to fully explain the favorable price performance of the Customer Choice Jurisdictions, it is worth highlighting some key factors:

- the development of capacity markets, including demand response as a resource, which send price signals about supply and demand and the economic value of capacity;
- prompt pass-through of natural gas prices and improved nuclear power plant performance;
- the unbundling of generation and delivery service pricing, thus providing valuable information for customers to enhance energy efficiency and alter usage patterns; and
- the ability of customers and retail providers in competitive markets to negotiate contract terms that tailor energy supply and pricing to load patterns and time of use.

## MEASURING GENERATION INVESTMENT AND PERFORMANCE

### *Competition Attracts Generation Investment*

Nearly two decades of empirical data not only debunk opponents’ claims that competition would produce greater price increases and volatility, but also their claims that competition would undermine generation investment and harm reliability. On the contrary, competitive markets have attracted billions of dollars for tens of thousands of new megawatts of generating capacity that is, based on objective criteria, outperforming generation in the Monopoly States.

### *Competitive and Monopoly States Added Generation at Similar Paces from 1997-2013*

Figure 12 shows that between 1997 and 2013, under both regulatory models there was substantial investment in new generation.<sup>20</sup> The 14 Customer Choice Jurisdictions added 73,900 MW of net summer capacity, a 28% increase, and the 35 Monopoly States added 206,800 MW of net summer capacity, a 40.5% increase. Figure 12 also shows the increases in generation output and in electricity consumption in the two groups of states.

FIGURE 12: 1997–2013 CHANGE IN CAPACITY, CONSUMPTION AND OUTPUT

CHOICE vs MONOPOLY

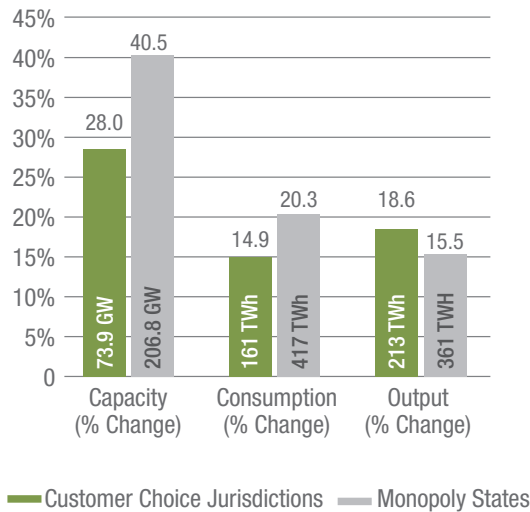
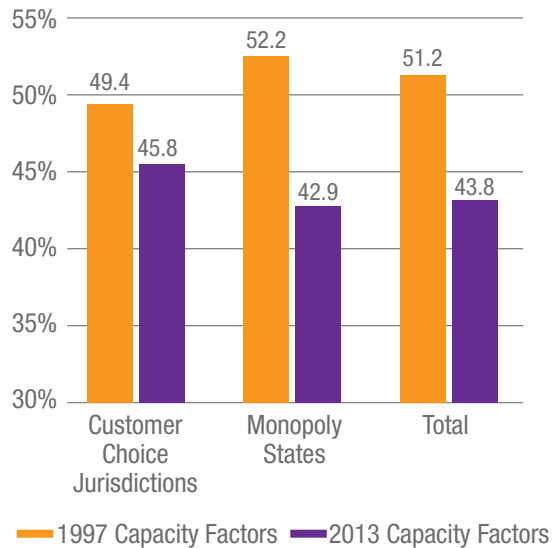


FIGURE 13: 1997–2013 % CHANGE IN CAPACITY FACTOR

CHOICE v MONOPOLY



*Efficiency: Generation in Customer Choice Jurisdictions Has Better Capacity Factors*

Figure 13 shows that Customer Choice Jurisdictions have moved ahead of Monopoly States in capacity factor, a standard electric industry measure of generation efficiency, i.e. the ratio of output to total potential production of a power plant.<sup>21</sup> In 1997, generation in the Choice Jurisdictions had an average capacity factor of 49.4%, whereas the Monopoly States’ average factor was higher at 52.2%. By 2013, however, average capacity factors in the Customer Choice Jurisdictions exceeded those in the Monopoly States, 45.8% versus 42.9%. In the context of a decline in capacity factors across the 48 contiguous states and D.C. from an average of 51.2% in 1997 to 43.8% in 2013, the Customer Choice Jurisdictions improved their efficiency relative to the Monopoly States. As a result, the Customer Choice Jurisdictions switched positions with the Monopoly States relative to the national average, with the Choice Jurisdictions now having an average capacity factor above, rather than below, the national average.

*Generation Effectiveness & Potency: Choice Jurisdictions Beat Monopoly States*

In order to enhance comparisons of the electricity competition and monopoly models and to further test opponents’ claims that competition cannot attract sufficient investment to maintain reliability, two additional generation performance measures were developed for this report: Effectiveness and Potency.

The first is “Effectiveness,” that is the extent to which generating capacity additions have kept pace with growth in consumption, as measured by the ratio of the percentage growth in generating capacity to the percentage growth in consumption. The Effectiveness ratio assumes a positive figure for consumption growth in a group of states since 1997. Only Maine, Ohio and Oregon have seen load decline since 1997.

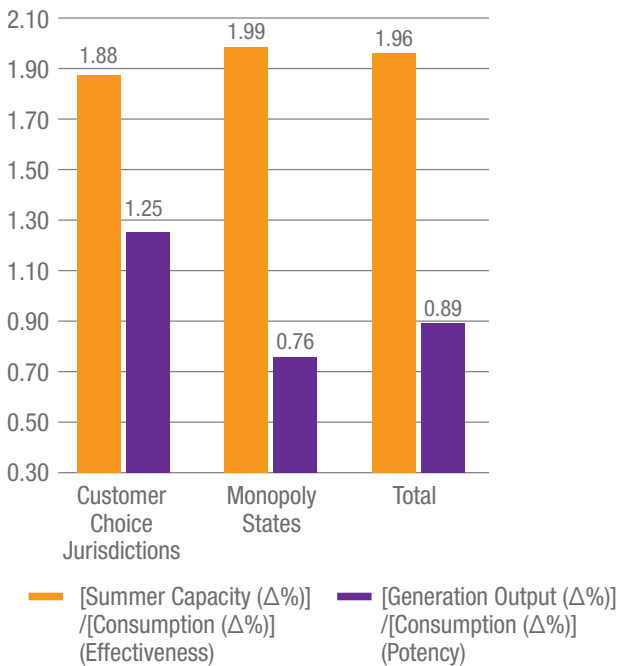
The second is “Potency,” as measured by the ratio of the percentage change in generation production to the percentage change in consumption. This criterion focuses not simply on generation capacity, but also on how well the generating assets meet consumers’ electricity needs.

Figure 14 shows that electricity consumption increased at different rates in Customer Choice Jurisdictions and the Monopoly States, but that they both added capacity at similar Effectiveness ratios of just under two times the rate of increase in MWh consumption: 1.88 in the Customer Choice Jurisdictions and 1.99 in the Monopoly States.

Figure 14 also shows, however, that under the Potency measure, generation in the Customer Choice Jurisdictions has substantially outperformed that in Monopoly States: the Potency ratio under choice was 1.25 compared to only 0.76 under monopoly regulation. Generation production in the Customer Choice Jurisdictions outpaced consumption growth, while in the Monopoly States consumption growth outpaced generation production.

FIGURE 14: 1997–2013 GENERATION EFFECTIVENESS AND POTENCY RATIOS:

CHOICE vs MONOPOLY



Resource Adequacy

A useful measure of Resource Adequacy in an electricity market or collection of markets is whether total annual generation production is equal to about 109% of total annual consumption. The 9% of production above consumption accounts for line losses and the like.<sup>22</sup> As shown in Figure 15, in 1997 the 14 Customer Choice Jurisdictions, as a group, were net importers, generating 106% of total consumption. In contrast, the 35 Monopoly States, as a group, were net exporters, generating 114% of total consumption. In 2013, however, both the Customer Choice Jurisdictions and Monopoly States, as groups, were at parity, each generating 109% of consumption.

FIGURE 15: 1997–2013 RESOURCE ADEQUACY: CHOICE vs MONOPOLY RATIO OF CAPACITY INCREASE TO CONSUMPTION INCREASE



In stark contrast to monopoly advocates' claim that Customer Choice discourages investment in capacity and therefore undermines supply adequacy and reliability, as the empirical data and objective criteria detailed above demonstrate, on both price and generation trends, competitive retail markets have performed as well as, or better than, monopoly retail markets.

The superior performance of the generation fleet in Customer Choice Jurisdictions is part of a broader transition of wholesale power transactions in the United States toward a framework that relies almost exclusively on market pricing under Federal Energy Regulatory Commission (FERC) supervision. FERC's fostering of Regional Transmission Organizations (RTOs) has facilitated the movement to non-discriminatory transmission of electricity, following in the steps of open access natural gas transmission.

Adding to the competitive dynamic has been the substantial growth since 1997 in the non-utility share of national generating capacity and the corollary decline in the share of generation controlled by vertically integrated monopoly utilities. In 1997 34% (260,206MW) of all generating capacity in the United States was owned by non-utility generators whereas in 2013 that figure had risen to 42% (448,149MW), closing the gap between utility and non-utility shares of generating capacity from a 32-point spread to just 16 points, on average about 1-point for each year during the competitive era.

### THE COMPELLING EXAMPLE OF THE FIVE-STATE INDUSTRIAL UPPER MIDWEST

The East North Central region (“Industrial Upper Midwest”)<sup>23</sup> offers an excellent opportunity for intra-regional comparison of the competitive and monopoly models. No other region has a comparable degree of regulatory diversity. Illinois and Ohio are competitive states; Indiana and Wisconsin have strictly adhered to traditional rate-of-return, monopoly regulation; and Michigan allows only 10% of utility load to shop, holding the remaining 90% of load captive to traditional monopoly.

The electricity supply market in Illinois has been largely competitive for over a decade, with open-access delivery rates set under regulated cost-of-service protocols.<sup>24</sup> In this respect, Illinois can be deemed the region’s acid test of competition’s relative performance. Applying empirical price/generation performance measurements used previously in the report, Illinois has outperformed the region’s Monopoly States on most measures.

#### Comparing Prices Among the Five States

Figures 16a and 16b show the trend lines for nominal and percentage price change trends in each of the five states. Most significantly, Illinois moved from being the highest-priced state in 1997 to being the lowest-priced in 2014. Further, the two competitive states, Illinois and Ohio, had the lowest percentage price increases, with Illinois considerably lower than the other four states.

FIGURE 16a: 1997-2014 YEAR-TO-YEAR NOMINAL PRICE CHANGE  
FIVE INDUSTRIAL UPPER MIDWEST STATES

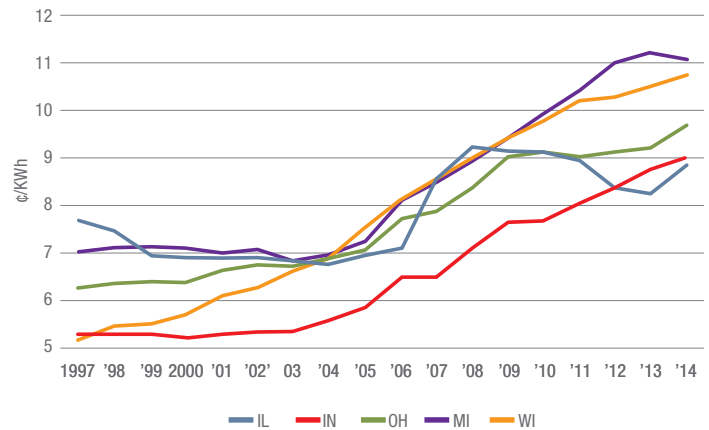
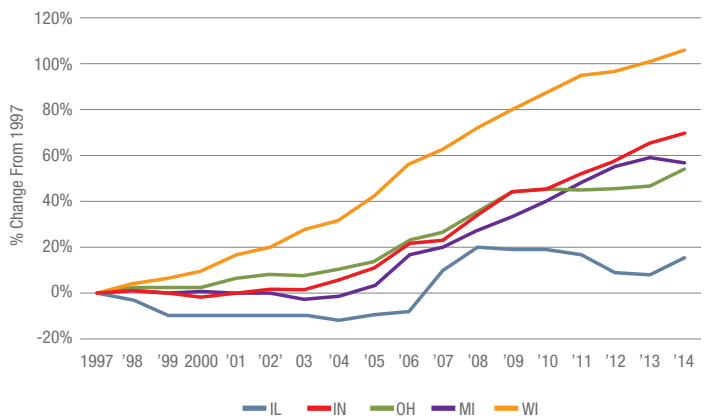


FIGURE 16b: 1997-2014 YEAR-TO-YEAR % PRICE CHANGE  
FIVE INDUSTRIAL UPPER MIDWEST STATES



As shown previously in Figure 10, Illinois had the nation’s lowest percentage price increase since 1997 (15.2%) while its monopoly neighbor, Wisconsin, had the highest (105.5%). Indiana, another next-door neighbor, had the 13th highest percentage price increase (69.7%), while Michigan’s was somewhat higher than the median (57.7%), and Ohio’s somewhat lower (54.6%).

Of particular interest is the most recent period (2008-2014) of economic stress and fairly flat load growth in the five-state Industrial Upper Midwest region.<sup>25</sup> The price trends in Illinois and Ohio, the two Customer Choice Jurisdictions in the region, highlight the central difference between competitive retail markets and monopoly

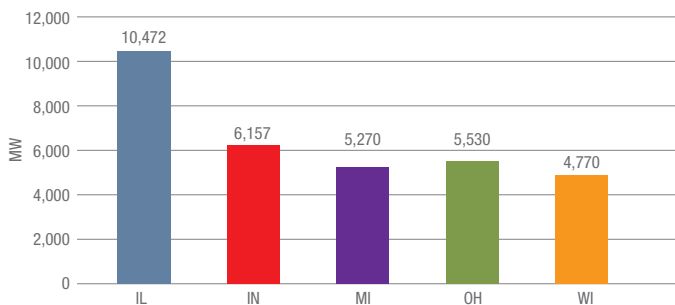
regulation. Monopoly regulation drove electricity prices substantially higher in Indiana, Michigan and Wisconsin, while prices in Illinois actually declined, and those in Ohio rose only modestly. As highlighted earlier in this report, monopoly regulation is driven by the imperative of setting tariffs to recover fixed costs and rising expenses even if doing so means increasing per unit prices because of a declining or static base, – ie. the “death spiral” syndrome. In contrast, competitive markets respond to actual economic conditions.

*Both Competitive and Monopoly States in the Region Attracted Substantial Generation Investment*

Figure 17 shows that all five states in the Industrial Upper Midwest Region have attracted billions of dollars in generation investment since 1997, creating a net increase in summer capacity of more than 32,000 MW. In no state has there been less than a 20% net increase. Notably, Illinois, the largest state in the region, and also the most competitively structured, accounted for nearly one-third of the capacity increase.

**FIGURE 17: 1997–2013 INCREASE IN SUMMER MW CAPACITY**

**FIVE STATES INDUSTRIAL UPPER MIDWEST**



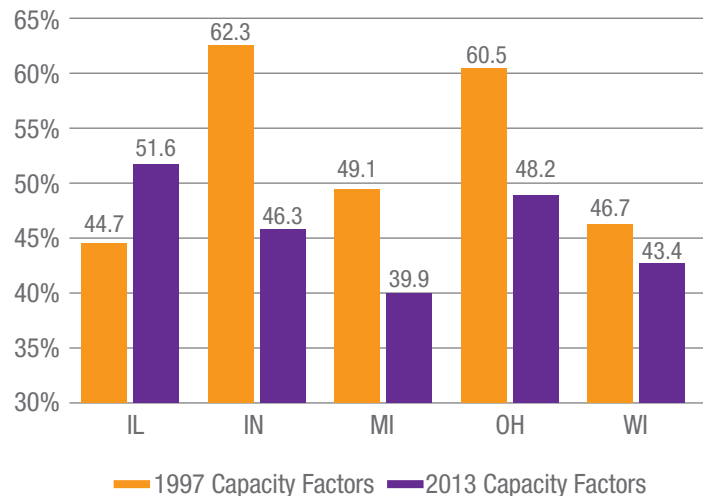
All five states increased summer generating capacity at a rate greater than the rate at which consumption increased. The Effectiveness Ratios were Illinois 2.60, Indiana 1.60, Michigan 3.66 and Wisconsin 2.52. Calculating an Effectiveness ratio for Ohio is not appropriate since Ohio added 20.5% to its summer capacity at the same time that consumption decreased by 5.2%. However, as the Effectiveness ratio requires, if a modest increase of just 1% in consumption is assumed, Ohio would have an Effectiveness ratio of 20.5.

*Competitive States’ Generation Is More Efficient*

Figure 18 shows that, consistent with the overall national trend, capacity factors in the region generally declined. Illinois actually defied this national trend, increasing its average capacity factor from 44.7% to 51.6%, going from lowest to highest. Notably as well, the other Customer Choice Jurisdiction, Ohio, had the second-highest capacity factor in the region.

**FIGURE 18: 1997–2013 CAPACITY FACTORS**

**FIVE STATES INDUSTRIAL UPPER MIDWEST**



*Illinois: The Region’s Powerhouse*

Figure 19 shows that Illinois moved from producing at only 106% of total consumption in 1997 to producing at 143% of total consumption in 2013, becoming by far the primary generation source in the five-state region. In contrast, the Monopoly State Indiana moved from net exporter to net importer. Similarly, Michigan, a marginal net exporter in 1997, had become a net importer in 2013.



FIGURE 19: 1997–2013 RESOURCE ADEQUACY

RATIO OF MWH PRODUCTION TO MWH CONSUMPTION:  
FIVE STATES INDUSTRIAL UPPER MIDWEST

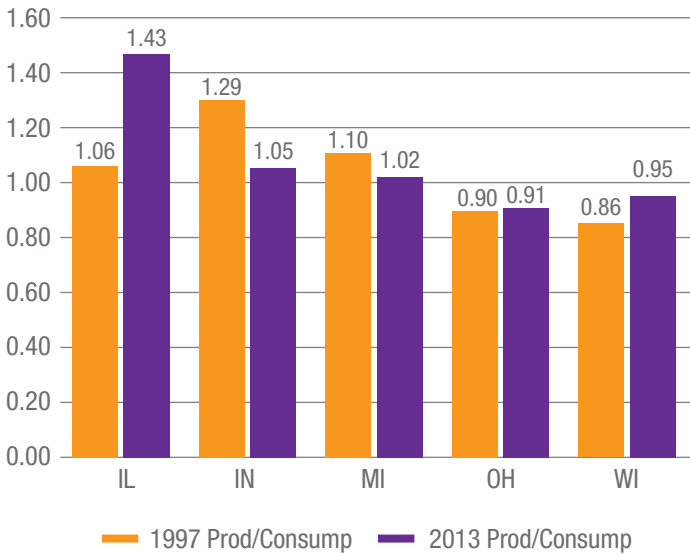
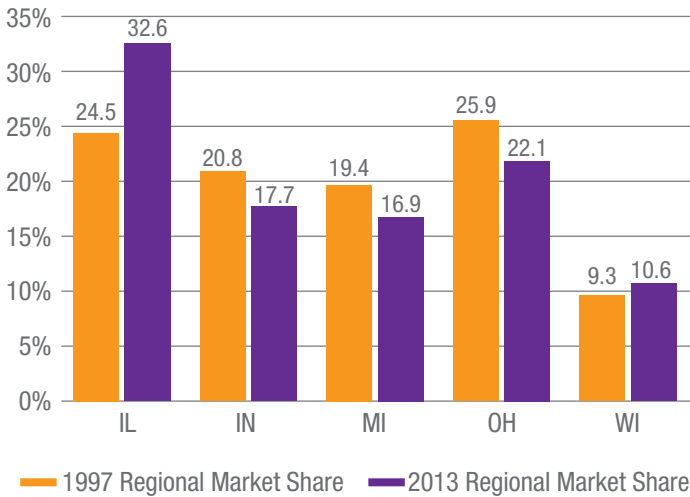


Figure 20 shows that Illinois' enhanced capacity factors were a key factor in its dramatic increase in generation market share in the region, moving it from only one-fourth of regional generation output in 1997 to nearly a third in 2013.

FIGURE 20: 1997-2013 REGIONAL GENERATION MARKET SHARES:  
FIVE STATES INDUSTRIAL UPPER MIDWEST



*Midwest Potency Gap*

Figures 21 and 22 show that under competition, Illinois increased electricity production by 50% between 1997 and 2013 against an increase in consumption of 11.7%. The marked percentage production increase in Illinois was more than four times greater than the percentage increase in consumption, thus achieving a Potency ratio far exceeding the other states' performance. Ohio's positive ratio resulted from a 5.2% consumption decline which exceeded its 3.9% drop in generation production. Wisconsin's production increase of 28.3% was just short of two times the consumption increase of 15%. Indiana and Michigan, however, had negative Potency ratios. In Indiana, consumption increased 18.3%, but generation production fell 3.8%. In Michigan, consumption increased by 5.8%, but generation production decreased by 1.5%.

FIGURE 21: 1997–2013 % CHANGE IN GENERATION PRODUCTION:  
FIVE STATES INDUSTRIAL UPPER MIDWEST

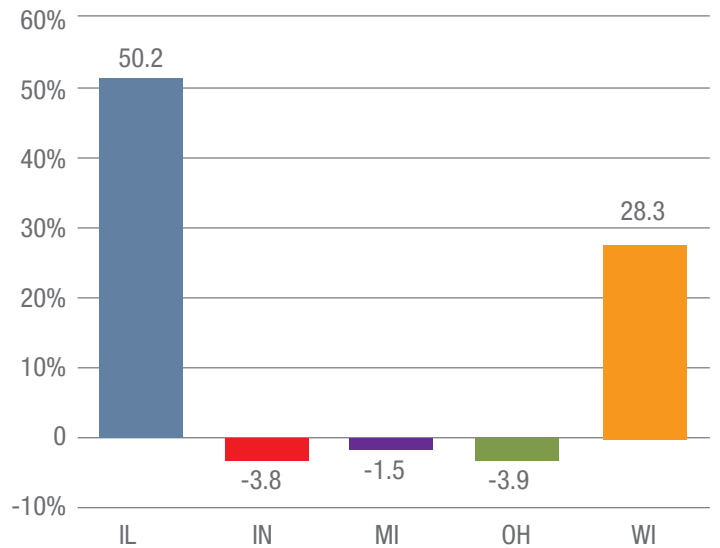
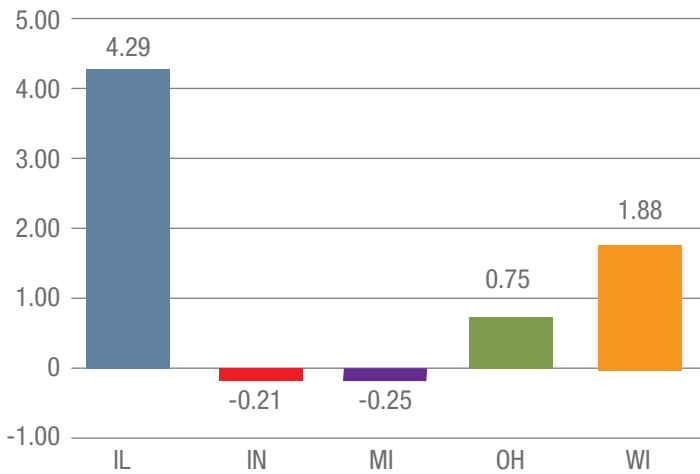


FIGURE 22: 1997–2013 POTENCY RATIO OF % INCREASE IN MWH PRODUCTION TO MWH CONSUMPTION

FIVE STATES INDUSTRIAL UPPER MIDWEST

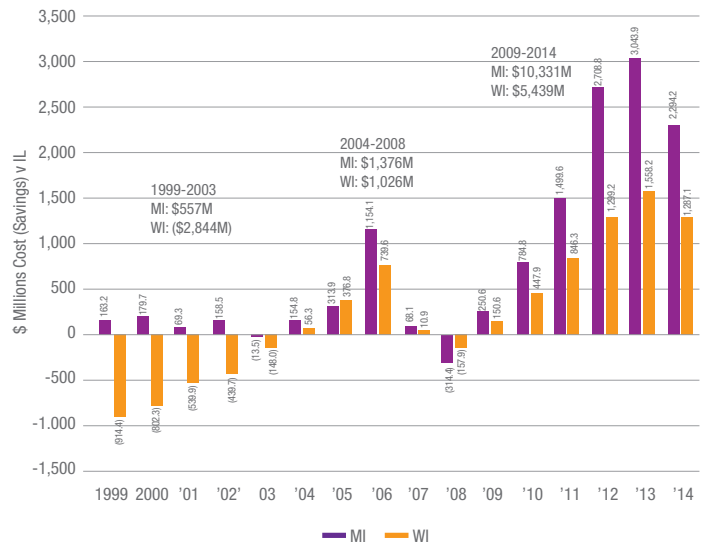


The Dollar Discrepancy

In the region, especially with respect to Illinois, Michigan and Wisconsin, the competitive and monopoly models have been associated with dramatically different price trends for consumers. As noted earlier in this report, the appropriate focus is not a snapshot of prices, but the relative price trends in the states since the commencement of competition. At the start of the competitive era, Illinois electricity prices far exceeded those in Wisconsin, whereas Illinois and Michigan prices were quite similar. In the ensuing years, however, prices in Wisconsin and Michigan rose to levels well above those in Illinois.

Figure 23 shows the year-by-year dollar value of the divergent price trends. In the initial period, 1999-2003, Michigan and Illinois remained closely aligned on price while Wisconsin exhibited an eroding price advantage. In the middle period 2004-2008, prices in Wisconsin and Michigan began to exceed those in Illinois, with customers in each of those Monopoly States paying price premiums of more than \$1 billion above what they would have paid if Illinois' competitive prices had been available. During 2009-2014 the above-market premiums consumers paid in the Monopoly States exploded, with Michigan customers paying a total premium of \$10.6 billion and those in Wisconsin paying a \$5.6 billion premium. A detailed chart of the dollar discrepancy calculations appears in the Appendix to this report.

FIGURE 23: 1997–2104 YEAR-BY-YEAR DOLLAR DISCREPANCY IF MICHIGAN & WISCONSIN CUSTOMERS HAD PAID ILLINOIS COMPETITIVE PRICES

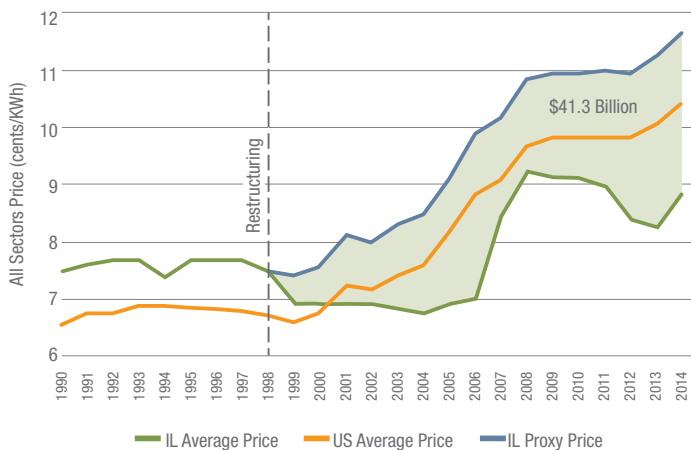


Illinois' \$41 Billion Improved Price Position

The competition/monopoly comparison in this region would be incomplete without including a calculation using the same method as made in a recent report.<sup>26</sup> During 1990-1998, i.e. the years immediately preceding implementation of choice in Illinois, the state's average electricity price consistently exceeded the national average weighted price by an average of nearly 12%. Following the implementation of choice, Illinois' relative price position changed dramatically, averaging from 1999-2014 a 9% discount to the national average weighted price, yielding an advantageous 21 percentage point average spread between the pre-choice price premium and the post-choice price discount.

Figure 24 shows the 1990-1998 pre-competition trend lines for actual Illinois average electricity prices and national average prices, and the trend lines for those actual average prices during the competitive period 1999-2014, alongside a 1999-2014 proxy price for Illinois. The proxy price reflects the average price premium if Illinois had maintained the same relative price position as in the pre-competition period. Through 2014, the value of the difference between the actual average Illinois competitive price, which has been consistently below the national level, and the proxy price, is \$41.3 billion.

**FIGURE 24: ILLINOIS IMPROVED ITS PRICE POSITION BY \$41.3 BILLION: 1999–2014 vs 1990–1998**



- As a group, Customer Choice Jurisdictions outperformed Monopoly States on price, with average prices increasing less than inflation in competitive markets and far exceeding inflation under monopoly regulation.
- Generation in Customer Choice Jurisdictions as a group outperformed that in Monopoly States, producing billions of dollars of new, more efficient generation with higher capacity factors than in Monopoly States.

Given the sustained, demonstrable success of Customer Choice both in price trends and in generation investment and performance, the debate should shift focus to the question of whether retail customer choice or monopoly regulation provides a better platform for addressing other current significant issues, such as:

- Stimulating and accommodating innovation in technologies and services such as smart meters to empower consumers.
- Reconciling environmental policies with the energy needs of consumers and allocating risks among market participants as coal plants retire and replacement generation is installed.
- Modernizing and streamlining regulation in order to direct limited regulatory resources to the most important public policy concerns and enhance responsiveness to fast changing economic, financial and technology conditions.

### PLATFORMS FOR THE FUTURE: RETAIL COMPETITION OR MONOPOLY REGULATION?

Empirical data for key indicators demonstrate that the retail electric choice revolution has evolved successfully: consumers increasingly embrace competition and Customer Choice Jurisdictions have outperformed Monopoly States in both price and generation trends. In particular:

- From 2003-2013, accounts served competitively increased 524% for C&I and 636% for residential.
- Similarly, from 2003-2014 electrical load served competitively surged even during a period of flat growth in consumption: 181% for C&I and 673% for residential.

## APPENDIX

### 1999-2014 YEAR-TO-YEAR CUMULATIVE DOLLAR DISCREPANCY IF MICHIGAN AND WISCONSIN CUSTOMERS HAD PAID COMPETITIVE ILLINOIS AVERAGE ALL-SECTOR PRICES

Year	IL W.A Price (¢/KWh)	MI W.A Price (¢/KWh)	MI Difference (¢/KWh)	MI Annual MWh	Premium (\$M)	WI W.A Price (¢/KWh)	WI Difference (¢/KWh)	WI Annual MWh	Premium (\$M)
1999	6.97	7.13	0.16	103,981,004	163.2	5.53	-1.44	63,547,451	-914.4
2000	6.94	7.11	0.17	104,772,214	179.7	5.71	-1.23	65,146,487	-802.3
2001	6.90	6.97	0.07	102,409,346	69.3	6.08	-0.83	65,218,293	-539.9
2002	6.94	7.09	0.15	104,713,520	158.5	6.28	-0.66	66,999,297	-439.7
2003	6.86	6.85	-0.01	108,877,192	-13.5	6.64	-0.22	67,241,496	-148.0
<b>Subtotal</b>					<b>557.2</b>				<b>-2,844.3</b>
2004	6.80	6.94	0.15	106,606,041	154.8	6.88	0.08	67,975,710	56.3
2005	6.95	7.23	0.28	110,444,564	313.9	7.48	0.54	70,335,684	376.8
2006	7.07	8.14	1.07	108,017,697	1,154.1	8.13	1.06	69,820,749	739.6
2007	8.46	8.53	0.06	109,296,748	68.1	8.48	0.02	71,301,301	10.9
2008	9.23	8.93	-0.30	105,781,272	-314.4	9.00	-0.23	70,121,827	-157.9
<b>Subtotal</b>					<b>1,376.5</b>				<b>1,025.7</b>
2009	9.15	9.40	0.26	98,121,014	250.6	9.38	0.23	66,286,439	150.6
2010	9.13	9.88	0.76	103,649,219	784.8	9.78	0.65	68,752,418	447.9
2011	8.97	10.40	1.43	105,053,559	1,499.6	10.21	1.23	68,611,620	846.3
2012	8.40	10.98	2.58	104,818,192	2,708.8	10.28	1.89	68,820,090	1,299.2
2013	8.26	11.21	2.95	103,038,305	3,043.9	10.51	2.25	69,124,043	1,558.2
2014	8.86	11.10	2.23	102,700,106	2,294.2	10.73	1.86	69,056,106	1,287.1
<b>Subtotal</b>					<b>10,582.0</b>				<b>5,589.3</b>
<b>TOTAL</b>					<b>12,515.7</b>				<b>3,770.7</b>

## ENDNOTES

- <sup>1</sup> DNV GL provides authoritative information on competitive electricity markets ([www.dnvgl.com/energy](http://www.dnvgl.com/energy)) and the U.S. Energy Information Administration (EIA) is the premier source for federally collected energy data ([eia.gov](http://eia.gov)).
- <sup>2</sup> Customer choice and monopoly models also operate in parallel in other parts of the world. For a slightly dated cross-national comparative discussion see “Electricity in Europe and North America, the Grand Experiment: Has Restructuring Succeeded on Either Continent?”, *Public Utilities Fortnightly*, February 2007, Terrence L. Barnich and Philip R. O’Connor.
- <sup>3</sup> Alaska and Hawaii are not included in the analyses conducted for this report because they are not connected to the major North American electrical grid networks and therefore are electrically isolated.
- <sup>4</sup> The fourteen Customer Choice Jurisdictions are: Connecticut, Delaware, District of Columbia, Illinois, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island and Texas. Each provides nearly universal eligibility for customers of all types to exercise choice. Supply provided by local utilities is priced mainly as a function of competitive wholesale procurement at market prices.
- <sup>5</sup> Texas is unique in two respects. First, the Electric Reliability Council of Texas (ERCOT), accounting for about 90% of all load in the state, is regulated exclusively by the state rather than by the Federal Energy Regulatory Commission (FERC) in contrast to other regional transmission organizations (RTOs). Customer Choice is unavailable to the 10% of load in Texas outside ERCOT. As is the case in other states, customers of municipal utilities and rural cooperatives also do not have market access. Second, Texas is an exception in that investor-owned utilities in the ERCOT market are entirely out of the supply business. Utility affiliates generally serve as default providers for residential and small business customers.
- <sup>6</sup> Nevada and Virginia terminated restricted access programs prior to 2014. Arizona, California, Michigan, Montana and Oregon permitted small slices of load to be served competitively in 2014. Choice load in these states is almost exclusively C&I, totaling only about 50,000 accounts. In 2014, the share of total load competitively served in these five states was: Arizona 1.5%; California 9.6%; Michigan 8.1%; Montana 14.1% and Oregon 3.8%. As restrictions increased, competitive load in all limited choice states, as a group, declined from a total of 78.6 million MWh, or 26% of national choice load in 2003, to 38 million MWh or just 5%.
- <sup>7</sup> For example, the change in the weighted average price between 1997 and 2014 in the seven restricted access states (AZ, CA, MI, MT, NV, OR, VA) was 60.3% as a straight average, nearly identical to the 60% for the 28 states that have never implemented choice. Further, the weighted nominal increase in average prices for the restricted access states was 57.5% compared to 61.7% in the strictly 28 Monopoly States. As the seven restricted access states and the 28 strictly Monopoly States are essentially indistinguishable from one another they can be combined for comparisons with the Customer Choice Jurisdictions.
- <sup>8</sup> Competitively served accounts include residential and small business customers in several states under municipal aggregation programs that procure supply through competitive procurement processes and generally permit customers to opt-out in order to take service from alternative suppliers or default service from local utilities.
- <sup>9</sup> Year-end 2014 DNV GL figures for customer accounts are for 2013 and thus lag behind competitive load figures by a year. Given the growth in load, the customer account figures for 2014 will certainly be higher than for 2013.
- <sup>10</sup> In the five restricted access states, virtually all eligible customers, mainly C&I, are enrolled in choice programs. There is considerable pressure for open access from non-residential customers who are being denied choice in Arizona, California and Oregon as well as in Nevada where limited choice was terminated. Michigan, which since 2008 has capped choice at 10% of load in any utility service area, provides a compelling example of customers’ unmet demand for choice. More than 11,000 customers, with annual consumption of over 12 million MWh, have enrolled in the “queue” hoping for market access if room under the 10% load cap becomes available. See the Michigan Public Service Commission for current information on the queue at [http://www.dleg.state.mi.us/mpsc/electric/restruct/faq/cap\\_data.html](http://www.dleg.state.mi.us/mpsc/electric/restruct/faq/cap_data.html) .

- <sup>11</sup> Arizona, California, Michigan, Montana and Oregon permitted small slices of load to be served competitively in 2014. Choice load in these states is almost exclusively C&I, with only about 50,000 accounts served by competitive suppliers. Nevada and Virginia terminated restricted access programs prior to 2014. The shares of total load competitively served in 2014 in the five restricted access states were Arizona 1.5%, California 9.6%, Michigan 8.1%, Montana 14.1% and Oregon 3.8%. Competitive load in all restricted choice states, as a group, declined from a total of 78.6 million MWh, or 26% of national choice load in 2003, to 38 million MWh or just 5% as restrictions were increasingly applied.
- <sup>12</sup> In most of the Customer Choice Jurisdictions some load is served by municipal utilities and rural cooperatives that have generally been permitted to maintain their traditional monopolies and to set their rates without state utility commission approval.
- <sup>13</sup> The analysis in this report uses weighted average prices to compare the two groups of Customer Choice jurisdictions and Monopoly States. To standardize the basis for prices, weighted averages take account of sales volumes in each state in the two groups by combining all revenue and dividing by all consumption. Some critics of Customer Choice use a straight average of prices which, for example, gives the same weight to Idaho as to Florida within the Monopoly group or to Delaware and Texas within the Customer Choice group. Another problematic method, quite separate from the use of straight averages, rather than weighted averages, is the exclusive reliance on inter-temporal nominal prices while ignoring percentage changes in prices or changes in prices adjusted for inflation. Attention exclusively to nominal prices, therefore, does not consider the impact of inflation and does not properly standardize price data. The most recent annual report of the American Public Power Association (APPA) comparing price performance in Customer Choice jurisdictions and Monopoly States concludes that the nominal price gap between the two groups has expanded between 1997 and 2014. While that is true, the percentage price gap has narrowed, as has the gap in weighted nominal prices when adjusted for inflation. <http://www.publicpower.org/Programs/interiordetail2col.cfm?ItemNumber=38695&navItemNumber=38586> (The original edition of this paper incorrectly reported that the APPA annual report used straight average prices rather than weighted prices.)
- <sup>14</sup> Inflation is based on the U.S. Bureau of Labor Statistics monthly estimates of the Consumer Price Index for all urban areas (CPI-U). [http://www.bls.gov/data/inflation\\_calculator.htm](http://www.bls.gov/data/inflation_calculator.htm)
- <sup>15</sup> While the straight average price technique's lack of standardization makes it methodologically unsuitable for comparing price trends between the two groups of states, it must be noted that there are, nonetheless, similar results with respect to percentage changes in weighted average price for the two groups. The 1997-2014 percentage all-sector straight average price increase for the 14 Customer Choice Jurisdictions was 44.6% compared to 60% for the Monopoly States, similar to the weighted average price increase of 40.8% and 59.9%, respectively.
- <sup>16</sup> See *Transmission Constraints in the Western and Eastern Interconnections 2009-2012*, U.S. Department of Energy, January 2014, 30.
- <sup>17</sup> The problem of price distortion and therefore price signals in traditional vertical monopoly regulation was identified as a central issue by advocates of electric industry competitive restructuring as far back as the mid-1980s. See "Competition, Financial Innovation and Diversification in the Electric Industry," Philip R. O'Connor, Robert G. Bussa and Wayne P. Olson, *Public Utilities Fortnightly*, February 20, 1986.
- <sup>18</sup> The data also debunk monopoly advocates' contention that competitive retail prices are naturally more volatile. First, claims of competitive market price volatility confuse prices in the real-time wholesale energy market with prices actually paid by retail customers of alternative suppliers. While some customers do avail themselves of real-time prices, most contract for various levels of certainty, including full-requirements fixed prices and mixes of fixed and variable pricing, depending on risk tolerance and budgeting goals. Second, competitive retail customers can select differing lengths of contract terms, thus locking in price certainty unavailable in Monopoly States in which utilities and regulators control the timing, magnitude and design of price changes. Customers in Monopoly States also cannot fix the point in time at which their prices will change or change that point in time during the midst of a contract period if they want to further hedge prices. The most recent research on the topic shows that there is no material difference between monthly price volatility in competitive states and traditionally regulated states. See "The Electricity Choice Debate: Conjectures and Refutations," *The Electricity Journal*, Aug/Sept, Vol. 27, Issue 7, Jonathan A. Lesser and Philip R. O'Connor.

<sup>19</sup> Energy Information Administration (EIA) at [http://www.eia.gov/dnav/ng/ng\\_pri\\_sum\\_a\\_epg0\\_pg1\\_dmcf\\_m.htm](http://www.eia.gov/dnav/ng/ng_pri_sum_a_epg0_pg1_dmcf_m.htm)

<sup>20</sup> The most recent EIA data on installed generating capacity and production are for 2013. Calculations for 2013 therefore also use 2013 consumption data.

<sup>21</sup> Capacity factor is a standard measure in the electric industry for generator performance, represented as the percentage of total output in a period if the unit were operating at full capacity. On an annual basis that would be the number of total net megawatt hours produced as a percent of the total number of megawatts of capacity multiplied by 8,760, the number of hours in a 365-day year.

<sup>22</sup> A state or group of states generating 109% or more of retail sales can reasonably be regarded as in resource balance. In the years 2008-2014 that national figure hit a high of 110.32% in 2008 and a low of 109.15% in 2013. Net imports vary somewhat year-to-year but generally constitute a net amount equal to about 1% of domestic generation. On this basis, 109% can be considered for this purpose minimum domestic resource adequacy.

<sup>23</sup> Illinois, Indiana, Michigan, Ohio, and Wisconsin are customarily treated as the East North Central region for data gathering and presentation by such federal bodies as the EIA, the U.S. Census Bureau and the U.S. Bureau of Labor Statistics.

<sup>24</sup> Legislation enacted in Illinois in 2011 (Energy Infrastructure Modernization Act (“EIMA”), 220 ILCS 5/16-108.5) authorized cost recovery mechanisms for ongoing investment in the electricity delivery network by the state’s major distribution utility companies. The legislation streamlined the regulatory process, including return on equity formulations tied to Treasury debt rates and a reliance on annual FERC Form 1 data, so as to strengthen and modernize the grid by facilitating deployment of advanced meter infrastructure (AMI) and other digital Smart Grid technologies. The law also prescribed various utility performance metrics, consumer protections and oversight by regulators and the legislature.

<sup>25</sup> As a group, the five Industrial Upper Midwest states have experienced substantially lower growth than the other contiguous states as a group. Electricity sales volumes in the five states in 2014 grew just 6.1% from 1997, while growth in the other states was 21.1%. Notably, in five out of the past seven years, the Midwest states saw year-to-year declines in consumption.

<sup>26</sup> A version of the chart showing the improved price position of Illinois since the commencement of Customer Choice implementation appeared in *Electricity & Natural Gas Customer Choice in Illinois: A Model of Effective Public Policy Solutions*, A Joint Report of the Illinois Chamber of Commerce, Illinois Manufacturers’ Association, Illinois Retail Merchants Association and Illinois Business Roundtable, February 2014. The report can be found at <http://irma.org/wp-content/uploads/2014/03/Illinois-Energy-Reform-Feb-2014.pdf>

## NOTE ON AUTHORS

**Philip R. O’Connor** is President of PROactive Strategies, Inc. and a former utility regulator, having served as Chairman of the Illinois Commerce Commission when, in 1984, the ICC issued the first white paper by a utility commission calling for a transition to competitive electricity markets. In addition to his lengthy private sector career, O’Connor has been appointed by six consecutive Illinois governors to various cabinet, board and transition committee positions, including as Director of Insurance and as a member of the State Board of Elections. He earned his doctorate in political science from Northwestern University and in 2007-8 served in the U.S. Embassy in Baghdad, Iraq as an advisor to the Iraqi Ministry of Electricity.

**Erin M. O’Connell-Diaz** is President of FutureFWD, Inc. and a veteran utility regulator having served two terms as a Commissioner at the Illinois Commerce Commission as well as its Deputy Chief Administrative Law Judge and as an Assistant Attorney General. Erin is the most experienced regulator in America in the transition to and implementation of electricity retail competition. She chaired the Electricity Committee of the National Assoc. of Utility Regulatory Commissioners, served on its Board of Directors, numerous committees and was lead regulator for USAID/DOE programs to Brazil and Kosovo. She is a Senior Fellow for Governing Institute and serves on the New Mexico State University Public Utilities Advisory Council. Erin is a cum laude graduate of St. Mary’s of Notre Dame and received her J.D. from Loyola University School of Law.