

November 2010

Are Renewable Portfolio Standards a Policy Cure-All?: A Case Study of Illinois's Experience

David G. Loomis

Adrienne Ohler

Follow this and additional works at: <https://scholarship.law.wm.edu/wmelpr>



Part of the [Energy and Utilities Law Commons](#)

Repository Citation

David G. Loomis and Adrienne Ohler, *Are Renewable Portfolio Standards a Policy Cure-All?: A Case Study of Illinois's Experience*, 35 Wm. & Mary Env'tl. L. & Pol'y Rev. 135 (2010), <https://scholarship.law.wm.edu/wmelpr/vol35/iss1/4>

Copyright c 2010 by the authors. This article is brought to you by the William & Mary Law School Scholarship Repository.

<https://scholarship.law.wm.edu/wmelpr>

ARE RENEWABLE PORTFOLIO STANDARDS A POLICY CURE-ALL?: A CASE STUDY OF ILLINOIS'S EXPERIENCE

DAVID G. LOOMIS & ADRIENNE OHLER*

ABSTRACT

Renewable Portfolio Standards (“RPS”) are stated to have a plethora of benefits: job creation, renewable energy growth, reduced carbon emissions, and a reduction in retail electricity prices. Often when a policy has multiple agendas, the policy fails to meet any of the objectives. Twenty-nine states have implemented an RPS, but state policies vary with regard to the sources considered eligible, out-of-state generation, credit trading, and the process of ensuring compliance. The various policy facets affect the growth of renewable energy within the state and affect the additional stated benefits of job creation and reduced emissions. This paper examines Illinois’s RPS as a case study for analyzing the many goals and impacts of other RPSs. We use Illinois’s market for electricity as a case study for several reasons. First, the RPS in Illinois focuses on encouraging wind generation by requiring seventy-five percent of the standard be generated from wind. This aspect allows us to focus on the growth of the wind industry. Next, the electricity market in Illinois allows customers to choose their electricity supplier. We can analyze restructuring and its impact on the renewable sector. Finally, Illinois is surrounded by states whose renewable industry may benefit from Illinois’s mandate. We will also examine the impact of Illinois’s standard on the renewable electricity generation in the surrounding states.

INTRODUCTION

The RPS has grown in popularity at the state level with twenty-nine states enacting various forms of RPSs by May 2010,¹ and over half

* David Loomis is the Executive Director of the Institute for Regulatory Policy Studies and Professor of Economics in the Department of Economics at Illinois State University. Adrienne Ohler is the Director of Outreach for the Institute for Regulatory Policy Studies and Assistant Professor of Economics in the Department of Economics at Illinois State University.

¹ DATABASE OF STATE INCENTIVES FOR RENEWABLES AND EFFICIENCY, RENEWABLES PORTFOLIO STANDARDS FOR RENEWABLE ENERGY (2010), *available at* <http://www.dsireusa>

the U.S. population lives in a state with a renewable standard.² Most states require that a fixed proportion of sales come from generation from renewable sources.³ A few states, such as Iowa, have a standard in which utilities are required to contract for a fixed capacity or build new capacity.⁴ Enforcement of such policies comes in various forms, such as financial penalties like alternative compliance payments or procurement of renewable energy credits (“RECs”) for the utilities by a central agency.⁵

Proponents of the RPS mandates argue that the policy provides a plethora of benefits, but the level of these benefits is unknown beforehand.⁶ Stated benefits include: job creation, renewable energy growth, reduced carbon emissions, and a reduction in retail electricity prices when combined with energy efficiency measures.⁷

A study prepared for the Illinois Department of Commerce and Economic Opportunity (“DCEO”) predicted the impact of an RPS similar to Illinois’s current standard of twenty-five percent by 2025.⁸ The study

.org/documents/summarymaps/RPS_Map.ppt (last visited Nov. 8, 2010). RPS is also known as a renewable energy standard (“RES”). States with an RPS include Hawaii, Washington, Oregon, California, Nevada, Arizona, Montana, Colorado, New Mexico, Texas, Minnesota, Iowa, Kansas, Missouri, Wisconsin, Illinois, Michigan, Ohio, North Carolina, Delaware, Maryland, New Jersey, Pennsylvania, Connecticut, Rhode Island, Massachusetts, New York, New Hampshire, and Maine. *Id.* Utah, Virginia, West Virginia, North Dakota, and South Dakota have a goal. *Id.*

² See *State Rankings—Statistical Abstract of the United States, Resident Population—July 2009*, U.S. CENSUS BUREAU, <http://www.census.gov/compendia/statab/2010/ranks/rank01.html> (last visited Nov. 8, 2010) (California, New York, Texas, Pennsylvania, Ohio, Illinois, Michigan, New Jersey, Washington, Arizona, and Massachusetts accounted for over half of the U.S. population in 2009).

³ *Renewable Portfolio Standards Fact Sheet*, U.S. ENVTL. PROT. AGENCY, http://www.epa.gov/chp/state-policy/renewable_fs.html (last updated April, 2009).

⁴ *Iowa, Incentives/Policies for Renewables & Efficiency*, DATABASE OF STATE INCENTIVES FOR RENEWABLES AND EFFICIENCY, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=IA01R&re=1&ee=1 (last updated Mar. 4, 2010) [hereinafter *Iowa Renewables*].

⁵ See *Iowa Renewables*, *supra* note 4; *Texas, Incentives/Policies for Renewables & Efficiency*, DATABASE OF STATE INCENTIVES FOR RENEWABLES AND EFFICIENCY, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=TX03R&re=1&ee=1 (last updated June 14, 2010).

⁶ Robert J. Michaels, *National Renewable Portfolio Standard: Smart Policy of Misguided Gesture?*, 29 ENERGY L.J. 79, 80–81 (2008).

⁷ JEFF DEYETTE & STEVE CLEMMER, UNION OF CONCERNED SCIENTISTS, THE WASHINGTON CLEAN ENERGY INITIATIVE: EFFECTS OF I-937 ON CONSUMERS, JOBS AND THE ECONOMY 8–9, 25 (2006), available at http://www.ucsusa.org/assets/documents/clean_energy/washington-i-937-report-final.pdf.

⁸ ATHANASIOS D. BOURNAKIS ET AL., ENERGY RESOURCES CENTER, THE ECONOMIC AND ENVIRONMENTAL IMPACTS OF CLEAN ENERGY DEVELOPMENT IN ILLINOIS 1–2 (2005), available at http://www.erc.uic.edu/PDF/Clean_Energy_Development.pdf; *Illinois Incentives/*

suggests an RPS of sixteen percent by 2020, starting in 2006 and increasing by one percent each year.⁹ Because of the similar policies, we use this study to compare the predicted impacts with the true impacts of the current RPS. The study's predicted job creation benefit was 1800 new jobs in the renewable energy business sector by 2012, 7800 new jobs in renewable energy development, and 191,000 new jobs by 2020.¹⁰ Predicted emissions reductions include: 108,750 tons per year ("tpy") of sulfur oxide ("SO_x") by 2009, 51,378 tpy of nitrous oxide ("NO_x") by 2009, and 23.6 million tpy of carbon dioxide ("CO₂") by 2009.¹¹ Installed cumulative generating capacity of renewable sources was predicted to grow to 1969 megawatts by 2009.¹² Total renewable energy in 2009 was predicted to be 7.5 million megawatt-hours ("MWh").¹³ The impact on electricity prices was, however, uncertain because the RPS included a rate cap.¹⁴ Proponents of the RPS suggested the RPS would decrease prices, while opponents suggested price increases.¹⁵ Research has shown that the price of electricity can rise or fall depending on the magnitude of price response by the natural gas market.¹⁶ Ratepayers and utilities, concerned with cost and price increases, suggested a rate cap.¹⁷ Thus, the cost of achieving the standard could only raise prices by 0.5% of the amount paid per kilowatt-hour ("kWh") during the previous year or an increasing fraction of the sales from when the program was first implemented.¹⁸

Often, when policies have multiple agendas or objectives, the policy fails to meet any of the objectives, or the policy meets a few objectives but with poor results. The RPS is not the best policy to lower emissions or reduce electricity prices.¹⁹ For example, Palmer and Burtraw

Policies for Renewable Energy, DATABASE OF STATE INCENTIVES FOR RENEWABLES AND EFFICIENCY, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=IL04R&re=1&ee=1 (last updated Aug. 27, 2010) [hereinafter *Illinois Renewables*].

⁹ BOURNAKIS ET AL., *supra* note 8, at 6.

¹⁰ *Id.* at 2.

¹¹ *Id.* at 65–67.

¹² *Id.* at 23.

¹³ *Id.* at 7.

¹⁴ See *Illinois Renewables*, *supra* note 8.

¹⁵ CAROLYN FISCHER, RESOURCES FOR THE FUTURE, HOW CAN RENEWABLE PORTFOLIO STANDARDS LOWER ELECTRICITY PRICES? 1–2 (2006), available at <http://www.rff.org/Documents/RFF-DP-06-20-REV.pdf>.

¹⁶ *Id.* at 2.

¹⁷ See Paul Davidson, *Shocking Electricity Prices Follow Deregulation*, USATODAY (Aug. 9, 2007), http://www.usatoday.com/money/industries/energy/2007-08-09-power-prices_n.htm.

¹⁸ See *Illinois Renewables*, *supra* note 8.

¹⁹ KAREN PALMER & DALLAS BURTRAW, RESOURCES FOR THE FUTURE, COST-

show that an RPS does not lower electricity prices as well as a renewable energy production credit.²⁰ A carbon cap policy would reduce more carbon emissions than an RPS.²¹ Finally, if the stringency of the standard is diluted through the political bargaining process, then the state will not experience renewable energy growth.²² Two examples of a non-binding standard include Maine's initial attempt at an RPS in 1999 and Pennsylvania's RPS.²³ In both instances, the impact of the RPS was negligible.²⁴

States have experienced varying results from their different standards and policies. Iowa and Minnesota have experienced significant growth in wind power.²⁵ Wisconsin and Maine have experienced little growth.²⁶ Some states, such as North Dakota and Indiana, are beginning to grow without an RPS but may be experiencing residual effects from the surrounding states and utilities that are preparing for the possibility that their voluntary goal will become a mandatory standard.²⁷

This paper examines Illinois's RPS as a case study for analyzing the many goals of the RPS and the impacts of the RPS in the electricity industry. Illinois provides a good case study for several reasons. First, the policy focuses on encouraging wind generation, and by studying wind, we can observe the growth of renewable energy.²⁸ Illinois's restructured electricity market is also interesting because it is one of the few states

EFFECTIVENESS OF RENEWABLE ELECTRICITY POLICIES 19–20 (2005), available at <http://www.rff.org/documents/RFF-DP-05-01.pdf>.

²⁰ *Id.*

²¹ *Id.* at 20.

²² See *infra* notes 23–27 (discussing non-binding standards).

²³ *Maine, Incentives/Policies for Renewable Energy*, DATABASE OF STATE INCENTIVES FOR RENEWABLES AND EFFICIENCY, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=ME01R&re=1&ee=0 (last updated Sept. 11, 2010) [hereinafter *Maine Renewables*] (Maine implemented a standard that was lower than the current generation.); *Pennsylvania, Incentives/Policies for Renewable Energy*, DATABASE OF STATE INCENTIVES FOR RENEWABLES AND EFFICIENCY, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=PA06R&re=1&ee=0 (last updated Aug. 27, 2010) [hereinafter *Pennsylvania Renewables*] (Pennsylvania included waste coal, coal-mine methane, and coal gasification as eligible renewable sources.).

²⁴ See *Maine Renewables*, *supra* note 23 (requirements below current existing percentages); *Pennsylvania Renewables*, *supra* note 23 (exemptions rendered the impact negligible).

²⁵ *U.S. Installed Wind Capacity and Wind Project Locations*, U.S. DEP'T OF ENERGY (Mar. 5, 2010), http://www.windpoweringamerica.gov/wind_installed_capacity.asp (follow "Installed Wind Capacity by State" spreadsheet link for raw data).

²⁶ *Id.*

²⁷ *Id.*

²⁸ See *Illinois Renewables*, *supra* note 8.

with an RPS that has deregulated retail choice, so consumers could theoretically opt for a more “green” generator.²⁹ To ensure compliance with the RPS, the Illinois Power Agency (“IPA”) procures RECs for the electric utilities.³⁰ Finally, Illinois is surrounded by states that have comparable renewable resources.³¹ We examine the surrounding states to compare the growth of renewables under different RPS policies.³² Additionally, even though Illinois has an in-state preference, several of the surrounding states may benefit from its strong standard by selling wind RECs to Illinois utilities.³³

This article proceeds with a brief history of the electricity industry in Illinois, and an examination of the events preceding and following the passage of the RPS. Next, we examine the structure of the RPS and how compliance is attained. In Part III, we examine some of the predictions and stated goals for the RPS. Then, we compare the impact of the RPS to the stated goals. Conclusions and policy recommendations are given in the final section.

I. ILLINOIS ENERGY BACKGROUND

To understand the impact of the renewable standard in Illinois, we must understand the history and current structure of the electricity market. Until 1997, electricity was generated, transmitted, and distributed through a local utility.³⁴ These local utilities were regulated by the

²⁹ Anita Szoke, *Electric Deregulation May Not Make Much Difference in Illinois, Advocates Say*, J. STAR, Mar. 19, 2002; ILL. COMMERCE COMM’N, ANNUAL REPORT ON ELECTRICITY, GAS, WATER AND SEWER UTILITIES 12 (2009), available at <http://www.icc.illinois.gov/reports/results.aspx?t=1>.

³⁰ ILLINOIS COMMERCE COMM’N, *supra* note 29, at 11.

³¹ See, e.g., *Wind Maps and Wind Resource Potential Estimates*, U.S. DEP’T OF ENERGY (June 2, 2010), http://www.windpoweringamerica.gov/wind_maps.asp.

³² See DATABASE OF STATE INCENTIVES FOR RENEWABLES AND EFFICIENCY, *supra* note 1 (States that do not have an RPS but whose renewable industry may benefit from Illinois’s mandate include Indiana, Kentucky, and North Dakota. States with an RPS include Missouri, Iowa, Minnesota, Wisconsin, Ohio, and Michigan.); J. Lon Carlson & David Loomis, *An Assessment of the Impact of Deregulation on the Relative Price of Electricity in Illinois*, THE ELECTRICITY J., July 2008, at 69.

³³ See Carlson & Loomis, *supra* note 32, at 69; *Illinois Renewables*, *supra* note 8.

³⁴ See Carlson & Loomis, *supra* note 32, at 62. Technically, there are three different types of companies that deliver electricity in Illinois. The first is investor-owned utilities such as Commonwealth Edison and Ameren that serve the majority of the customers and load in Illinois. See ILLINOIS COMMERCE COMM’N, *supra* note 29, at 13–14. The second type of company is a cooperatively owned company. *Id.* at 13. These companies are owned by the

Illinois Commerce Commission (“ICC”) using traditional rate-of-return regulation.³⁵ The utilities owned the generating plants, the transmission lines, and the distribution lines that carry power to homes and businesses.³⁶ All of this capital was included in the utility’s rate base, and it was allowed to earn a return on their investments.³⁷

With the passage of the Electric Service Customer Choice and Rate Relief Act (“ESCCRRA”) of 1997, Illinois began a process to restructure wholesale and retail electricity markets.³⁸ The ESCRRA allowed Alternative Retail Electric Suppliers (“ARES”) to enter the market and compete with the utilities to serve customers.³⁹ It also allowed the utilities to break into two parts—a generating subsidiary that owned the power plants and the transmission and distribution subsidiary that owned the lines.⁴⁰ The generating subsidiary was no longer regulated, but the transmission and distribution subsidiary continued to be rate-of-return regulated.⁴¹ This competitive market was subject to a long phase-in period and stranded cost recovery.⁴² Under the ESCRRA, the rates for residential

customers themselves and serve a large geographic area in more rural areas. *See Electricity Co-op Members Hear Updates on Rising Energy Costs*, SPARTA NEWS-PLAINDEALER (Illinois), Aug. 9, 2007; Maggie Borman, *Company Pins Hopes on Energy-Producing Farm: Electricity Wholesaler Plans 20 Turbines Near Pittsfield*, THE TELEGRAPH (Alton, Ill.), Nov. 16, 2008. Typically, they only own the distribution network and purchase transmission and generation services from the investor-owned utility. *See, e.g., Electricity Co-op Members Hear Updates on Rising Energy Costs, supra*. Co-ops are not regulated by the ICC and are exempt from the RPS. ILL. COMMERCE COMM’N, *supra* note 29, at 13; *Illinois Renewables, supra* note 8. The third type of company is the municipally-owned utility or “muni” for short. ILL. COMMERCE COMM’N, *supra* note 29, at 13. Munis are owned by the city government, are not regulated by the ICC, and are also exempt from many laws such as the RPS. *Id.*; *Illinois Renewables, supra* note 8. Except where indicated, all of the information in this section referring to utilities alone applies to investor-owned utilities in the state.

³⁵ *See* ILL. COMMERCE COMM’N, *supra* note 29, at 13; Linda S. Caldwell, *The Changing Face of Utility Regulation*, NUCLEAR NEWS, Feb. 1986, at 47.

³⁶ *See, e.g., ComEd Completes Transfer of State Line Generating Station*, PR NEWSWIRE, Dec. 30, 1997.

³⁷ *See, e.g., Caldwell, supra* note 35.

³⁸ ILL. COMMERCE COMM’N, RETAIL AND WHOLESALE COMPETITION IN THE ILLINOIS ELECTRICITY INDUSTRY: FOURTH TRIENNIAL REPORT 7 (2009), available at <http://www.icc.illinois.gov/ORMD/> [hereinafter FOURTH TRIENNIAL REPORT].

³⁹ *See id.*

⁴⁰ *Id.* at 7–8.

⁴¹ *Id.* at 7. The law also allowed the utilities to sell their generating plant outright. Paul Gordon, *Ameren Corp. Transfers Assets*, J. STAR (Peoria, Ill.), Oct. 7, 2003. Commonwealth Edison sold their coal-fired generating plants to a firm called Midwest Generation under this provision in the law. *See* FOURTH TRIENNIAL REPORT, *supra* note 38, at 7.

⁴² *See Illinois Passes Electric Restructuring, Customer Choice by 2002*, ELECTRICITY

customers were decreased by five percent (Central Illinois Light Company (“CILCO”) customers) and others to twenty percent (Illinois Power and Commonwealth Edison customers) and then frozen until January 1, 2005.⁴³ This freeze was later extended until January 1, 2007, when no ARES entered the market to compete for residential customers.⁴⁴ Residential customers saved an estimated \$5.2 billion as a result of residential rate reductions in the years 1998–2006.⁴⁵

This transition period from 1997 to 2007 was also a time of tremendous industry consolidation in Illinois. Commonwealth Edison was owned by Unicom when it merged with Philadelphia Electric Company (“PECO”) from Philadelphia to form Exelon.⁴⁶ Ameren bought out Illinois Power, Central Illinois Public Service Company (“CIPS”), and CILCO and renamed them AmerenIP, AmerenCIPS, and AmerenCILCO.⁴⁷ MidAmerican Energy, which has most of its service territory in Iowa but serves parts of Illinois, was acquired by Berkshire Hathaway.⁴⁸ In addition to these acquisitions of whole companies, several generating assets were bought and sold. The Clinton Nuclear Plant was sold by Illinois Power to a company that eventually became Exelon Generation,⁴⁹ and Commonwealth Edison sold all its coal-fired generating plants to MidWest Generation.⁵⁰

DAILY, Nov. 18, 1997.

⁴³ Szoke, *supra* note 29.

⁴⁴ See FOURTH TRIENNIAL REPORT, *supra* note 38, at 7.

⁴⁵ ILL. COMMERCE COMM’N, SUMMARY OF ANNUAL REPORTS FILED BY ELECTRIC UTILITIES REGARDING THE TRANSITION TO A COMPETITIVE ELECTRIC INDUSTRY 1 (2007), available at <http://www.icc.illinois.gov/reports/Results.aspx?t=12> [hereinafter SUMMARY OF ANNUAL REPORTS].

⁴⁶ See Steven Lipin & Rebecca Smith, *Unicom, Peco to Announce Deal to Form One of the Largest Utilities in Nation*, WALL ST. J., Sept. 23, 1999, at A6; *About Us*, EXELONCORP.COM, <http://www.exeloncorp.com/aboutus.aspx> (last visited Nov. 8, 2010).

⁴⁷ See *Ameren Completes Acquisition*, WALL ST. J., Feb. 3, 2003; *Ameren Corp.: Union Electric and Cipsco Complete Planned Merger*, WALL ST. J., Jan. 2, 1998; Dennis K. Berman & Robin Sidel, *Ameren to Buy Illinois Unit From Dynegy for \$500 Million*, WALL ST. J., Feb. 3, 2004, at A11; *Highlights*, AMEREN.COM, <http://www.ameren.com/sites/aiu/Pages/Home.aspx> (last visited Nov. 8, 2010).

⁴⁸ Press Release, MidAmerican Energy, Berkshire Hathaway, Walter Scott and David Sokol to Acquire MidAmerican Energy Holdings; Transaction Priced at 29% Premium to Market (Oct. 25, 1999), available at <http://www.berkshirehathaway.com/news/oct2599.html>.

⁴⁹ *Clinton Power Station Now Under New Owner; Illinois Power, AmerGen Close Nuclear Plant Sale*, PR NEWSWIRE, Dec. 16, 1999; *Exelon Generation Formally Integrates AmerGen Assets Into Exelon Nuclear*, EXELONCORP.COM (Jan. 8, 2009), http://www.exeloncorp.com/Newsroom/pr_20090108_Generation.aspx.

⁵⁰ *Illinois Restructuring Active*, U.S. ENERGY INFO. ADMIN., <http://www.eia.doe.gov/cneaff/electricity/page/restructuring/illinois.html> (last visited Nov. 8, 2010).

Also during this ten year period, numerous ARES entered the market to serve the largest commercial and industrial customers in Commonwealth Edison's and AmerenIP's territories,⁵¹ but other customer classes and other service territories lagged behind.⁵² More "recent data shows substantial numbers of medium and small non-residential customers switching from bundled service" to an ARES.⁵³ Additionally, the Ameren-CILCO and AmerenCIPS service territories, which had formerly lagged behind, are now seeing customers switch at nearly the same rate as the AmerenIP service territory.⁵⁴

Table 1 lists the percentage of customers receiving delivery service from the utility but electric supply from an ARES at the end of 2008.⁵⁵ Note that the higher usage customers are the ones that have switched to an ARES.⁵⁶ The percentage of small customers (under one MW) using an ARES ranges from 6.7% in AmerenCIPS territory to 11.2 % in Commonwealth Edison territory.⁵⁷ For larger customers (above one MW), 87.9% of customers have switched in AmerenCIPS at the low end, and 93.2% of customers in Commonwealth Edison have switched at the high end.⁵⁸

Similar results of customer switching are found when we compare the electric usage of customers who switched to an ARES. In Table 1, usage rates are presented as the percentage of usage receiving delivery service from an electric utility but electric supply from the ARES.⁵⁹ For small customers, 33.5% of the usage in AmerenCIPS territory has switched to an ARES, and 54.7% of the usage in Commonwealth Edison territory has switched.⁶⁰ For large customers, 97.5% of the usage in AmerenCIPS territory has switched to an ARES, and 96.7% of the usage in Commonwealth Edison territory has switched.⁶¹

Additionally, more switching occurred by non-residential than by residential customers:

As of October 2009, approximately 71,000 non-residential customers were purchasing power and energy from an . . .

⁵¹ See FOURTH TRIENNIAL REPORT, *supra* note 38, at 3.

⁵² *Id.* at 2, 4.

⁵³ *Id.* at 2.

⁵⁴ *Id.*

⁵⁵ See *infra* Table 1; see also FOURTH TRIENNIAL REPORT, *supra* note 38, at 3.

⁵⁶ See *infra* Table 1.

⁵⁷ See *infra* Table 1.

⁵⁸ See *infra* Table 1.

⁵⁹ See *infra* Table 1.

⁶⁰ See *infra* Table 1.

⁶¹ See *infra* Table 1.

. [ARES] or an electric utility selling outside its service area The percentage of RES usage for non-residential customers with a peak demand above one megawatt in the service territories of the three Ameren Companies and Commonwealth Edison exceeds 90%.⁶²

Compared to residential customers, switching by non-residential customers is substantial. On the other end of the spectrum, the first residential customers did not switch to alternative suppliers until 2008 even though the residential market opened to competition in May 2002.⁶³ By October 31, 2009, only 234 residential customers had switched to an ARES.⁶⁴

A. *Illinois Power Agency Act*

At the end of 2006, with the expiration of the residential rate freeze nearing, the Illinois Commerce Commission conducted a reverse auction in which Commonwealth Edison and Ameren, the two remaining utilities, committed to purchase power for varying periods of time: seventeen, twenty-nine, and forty-one months.⁶⁵ Beginning in January 2007, power would be purchased from various suppliers and delivered to residential, commercial, and industrial customers who had not switched to an ARES.⁶⁶ Rather than having a bidding process to supply a fixed amount of power at a given time of day, the auction was structured so that the total load was divided into slices based on a percentage of load at any given moment.⁶⁷ These slices, called tranches, are for a specified fraction of the customer class load over the specified duration.⁶⁸ The amount of electricity that must be supplied by the winning bidder varies greatly over a day, week, and year.⁶⁹ This means that the winning bidder must have base-load generation

⁶² See ILL. COMMERCE COMM'N, *supra* note 29, at Year in Review 2009.

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ FOURTH TRIENNIAL REPORT, *supra* note 38, at 9.

⁶⁶ *See id.*

⁶⁷ *See id.*

⁶⁸ *Id.* The word “tranche” comes from the French word meaning “A cutting, a cut; a piece cut off, a slice.” 18 OXFORD ENGLISH DICTIONARY 383 (J.A. Simpson & E.S.C. Weiner eds., 2d ed. 1991).

⁶⁹ FOURTH TRIENNIAL REPORT, *supra* note 38, at 9; *see also* Matias Negrete-Pincetic & George Gross, *Lessons from the 2006 Illinois Electricity Auction*, 2007 INT'L INST. FOR RES. AND EDUC. IN POWER SYS. 1, 5 (2007), *available at* <http://energy.ece.illinois.edu/GROSS/papers/2007%20Aug-%20Lessons%20from%20th>

and peak-load generation in its portfolio to meet the demand in the most efficient manner.⁷⁰ This type of auction also shifted the risk of generation cost volatility from the distribution utilities onto the bidders in the auction.⁷¹ In fact, sophisticated risk managers, such as Morgan Stanley and Goldman Sachs, were bidders in the auction even though they themselves owned no generating assets.⁷²

The results of the auction caused residential rates to increase by twenty-one percent for Commonwealth Edison customers and thirty-six to fifty-three percent for Ameren customers.⁷³ Although the real average residential price of electricity was still lower in 2007 than it was in 1997, few customers understood this fact.⁷⁴ The dramatic price increases caused a large public backlash.⁷⁵ “The public and political outcry culminated in the passage of the Illinois Power Agency Act (IPAA) in August 2007.”⁷⁶

The IPAA eased the cost of restructuring that had occurred while rates were frozen.⁷⁷ First, it “provided over \$1 billion in new rate relief over four years to residential and certain non-residential electric customers”⁷⁸ This rate relief was delivered as a credit on customer’s bills and helped to lessen the impact of the large rate increases.⁷⁹ Second, the IPAA “declared markets for large commercial and industrial customers as competitive . . . and further eased regulatory requirements relating to utility reorganizations, plant retirements, asset transfers and cost recovery mechanisms.”⁸⁰

The IPAA also created a new state government agency, the IPA, whose job is to procure power for the public utilities on behalf of residential customers.⁸¹ The IPA’s mission is “[t]o ensure adequate, reliable,

e%202006%20IL%20Electricity%20Auction.pdf.

⁷⁰ See Negrete-Pincetic & Cross, *supra* note 69, at 5.

⁷¹ See FOURTH TRIENNIAL REPORT, *supra* note 38, at 9.

⁷² Proposal of Commonwealth Edison Company, ILL. COMMERCE COMM’N, No. 05-0159, 103 (2006), available at <http://www.icc.illinois.gov/downloads/public/edocket/161341.pdf>.

⁷³ Carlson & Loomis, *supra* note 32, at 62.

⁷⁴ *Id.* at 64–65.

⁷⁵ *Id.* at 62.

⁷⁶ *Id.*

⁷⁷ See FOURTH TRIENNIAL REPORT, *supra* note 38, at 9–10.

⁷⁸ *Id.*

⁷⁹ Illinois Power Agency Act, Pub. Act 095-0481, § 16-111.5A(e), (f) (2007), available at <http://www.ilga.gov/legislation/publicacts/95/PDF/095-0481.pdf>.

⁸⁰ FOURTH TRIENNIAL REPORT, *supra* note 38, at 10.

⁸¹ See *id.*

affordable, efficient, and environmentally sustainable electric service at the lowest total cost over time for Illinois consumers.”⁸² The IPA is an agency of the State of Illinois “with a 5-member board appointed by the Governor”⁸³ Acting as a separate entity rather than under authority of the Illinois Commerce Commission, the IPA “procure[s] electricity . . . and oversees the distribution of power.”⁸⁴ In 2009, the IPA operated with one employee and utilized expenditures of \$1.25 million.⁸⁵

In September 2008, the IPA presented its initial procurement plan to the ICC.⁸⁶ The plan used a three-year ladder approach from 2009 through 2014 to procure electricity for retail customers served by Commonwealth Edison and Ameren Illinois.⁸⁷ In contrast to the 2007 auction where bidders agreed to supply time-varying amounts of power, the IPA procurement plan asked for fixed amounts of power.⁸⁸ This procurement plan shifted the risk from the bidder to the IPA and resulted in lower overall prices.⁸⁹ The IPA’s initial procurement plan was approved by the ICC on January 7, 2009.⁹⁰

The IPAA also included an RPS and an Energy-Efficiency Portfolio Standard as part of the legislation.⁹¹ Several attempts had been made in

⁸² STATE OF ILL., ILLINOIS STATE BUDGET FISCAL YEAR 2010 10–19 (2009), available at http://www.state.il.us/budget/FY2010/FY2010_Operating_Budget.pdf. The IPA procures RECs for Ameren and Commonwealth Edison. See Adrienne M. Ohler & Kristi Radusewicz, *Indirect Impacts in Illinois from a Renewable Portfolio Standard*, THE ELECTRICITY J., Aug./Sept. 2010, at 67. The RPS initially only required generating utilities with 100,000 customers or greater. See *Illinois Renewables*, supra note 8. Only Ameren and Commonwealth Edison fit this requirement. *Illinois Renewables*, supra note 8. In 2008, Illinois passed a law requiring ARES to follow a similar RPS or pay an alternative compliance payment (“ACP”). Illinois Power Agency Act, Pub. Act 096-0159, § 16-115(d) (2009), available at <http://www.ilga.gov/legislation/publicacts/96/0960159.htm>. The IPA enforces the RPS but does not procure RECs for the ARES. See Ohler & Radusewicz, supra, at 67.

⁸³ Ohler & Radusewicz, supra note 82, at 74.

⁸⁴ *Id.*

⁸⁵ See STATE OF ILL., supra note 82, at 10–19.

⁸⁶ *Illinois Power Agency 2009 Procurement*, LEVITAN.COM, <http://www.levitan.com/AIURFP09/> (last visited Nov. 8, 2010).

⁸⁷ Paul Ring, *Illinois Power Agency’s First Procurement Plan Features Three-Year Laddered Contracts*, ENERGY CHOICE MATTERS (Sept. 5, 2008), <http://www.energychoicematters.com/sample/20080905ECM.pdf>.

⁸⁸ FOURTH TRIENNIAL REPORT, supra note 38, at 10.

⁸⁹ See *id.*

⁹⁰ *Illinois Power Agency 2009 Procurement*, supra note 86.

⁹¹ Illinois Power Agency Act, Pub. Act 095-0481 § 1-75(c) (2007), available at <http://www.ilga.gov/legislation/publicacts/95/095-0481.htm>; Illinois Power Agency Act, Pub. Act 096-0159 § 8-103(b) (2009), available at <http://www.ilga.gov/legislation/publicacts/96/096-0159.htm>.

Illinois by the Environmental Law and Policy Center, and other renewable energy advocates, to pass an RPS as early as 2003 without success.⁹² The utilities were in opposition to an RPS during the rate freeze because there was no mechanism for them to recover the higher cost of renewable energy from ratepayers.⁹³ The utilities dropped their opposition in a large political compromise when writing the IPAA.⁹⁴

The IPAA includes a consumer protection clause that ensures that ratepayers do not experience large rate increases due to the procurement of renewable energy as stated earlier.⁹⁵ For 2010, the maximum statutory cost standard on renewables is “the greater of an additional 0.5% of the amount paid per kilowatt[-]hour by those customers during the year ending May 31, 2009 or 1.5% of the amount paid per kilowatt[-]hour by those customers during the year ending May 31, 2007.”⁹⁶

B. *Structure of Illinois’s Renewable Portfolio Standard*

The basic idea behind an RPS is to mandate electricity companies to generate or purchase some of its electricity from renewable sources.⁹⁷ Illinois’s RPS requires utilities with 100,000 customers or more to generate twenty-five percent of its electricity in 2025 from renewable sources.⁹⁸ Ameren and Commonwealth Edison are the only two utilities in Illinois that have more than 100,000 customers.⁹⁹ ARES were not originally included in the RPS.¹⁰⁰ ARES were added to the RPS on June 1, 2009.¹⁰¹

For the major electric utilities, the standard began at two percent in 2008 and increased over time.¹⁰² Table 2 shows the minimum percentage

⁹² See CHARLES KUBERT, ENVTL. L. & POL'Y CTR., *ADVANCING WIND POWER IN MICHIGAN: PRESCRIPTION FOR A SUCCESSFUL RPS* (2005), <http://www.grea.org/education/UTP/CharlesKubert1.pdf>.

⁹³ Ohler & Radusewicz, *supra* note 82, at 73–74.

⁹⁴ See *Government-Brokered Rate Relief Encourages Sustainable Energy Development*, K&L GATES (Sept. 2007), <http://www.klgates.com/newsstand/detail.aspx?publication=5577>.

⁹⁵ FOURTH TRIENNIAL REPORT, *supra* note 38, at 16.

⁹⁶ Illinois Power Agency Act, Pub. Act 095-0481, § 12-103(d)(3), *available at* <http://www.ilga.gov/legislation/publicacts/95/095-0481.htm>.

⁹⁷ See Ohler & Radusewicz, *supra* note 82, at 65, 67.

⁹⁸ *Illinois Requires 25 Percent Renewable Power by 2025*, U.S. DEP'T OF ENERGY (Sept. 5, 2007), http://apps1.eere.energy.gov/states/state_news_detail.cfm/news_id=11242/state=IL.

⁹⁹ *Illinois Renewables*, *supra* note 8.

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² *Id.*

over time.¹⁰³ The gradual increase allows the utility to “slowly adapt more renewable technologies”¹⁰⁴ This implies that impacts on emissions, job growth, renewable capacity growth, and price changes are gradual as well.¹⁰⁵

The sources that are eligible under the renewable requirement include wind, solar, landfill gas, and hydroelectric.¹⁰⁶ Wind is required to fill seventy-five percent of the standard.¹⁰⁷ Because of the expensive technology for solar photovoltaic (“PV”), most solar advocates believe that solar cannot grow without a large carve-out, similar to the carve out for wind.¹⁰⁸

Enforcement of the RPS is through the IPA, which procures RECs for the electric utilities.¹⁰⁹ Rather than purchasing electricity directly from renewable sources, the utility purchases unbundled electricity from all different sources.¹¹⁰ The utility then provides bundled distribution and generation and unbundled RECs to fulfill its obligation.¹¹¹ Compliance in one year is based on the previous year’s sales.¹¹² For example, “the compliance period starting June 1, 2008, (2%) is based on eligible sales from June 1, 2006, to May 31, 2007.”¹¹³ This implies a lag between sales growth and renewable growth.¹¹⁴ The REC allows the utility to continue

¹⁰³ See *infra* Table 2.

¹⁰⁴ Ohler & Radusewicz, *supra* note 82, at 66.

¹⁰⁵ ARES are treated differently under the RPS. See *Illinois Renewables*, *supra* note 8. Their obligation is measured by “the actual amount of metered electricity (megawatt-hours) supplied . . . in the compliance year” *Id.* Rather than procuring RECs, ARES can use the ACPs to meet 100% of their quota. AMEREN ENERGY MARKETING, RENEWABLE PORTFOLIO STANDARD—RPS (2009), available at <http://www.ameren.com/sites/aem/AboutAEM/Documents/BrochureRPS.pdf>. RECs can fulfill at a maximum fifty percent of their quota, and “[t]hey must utilize the PJM Environmental System Generation Attribute Tracking System (PJM-GATS) or the Midwest Renewable Energy Tracking System (M-RETS) to independently verify the quantity and source of renewable energy resources procured.” *Illinois Renewables*, *supra* note 8.

¹⁰⁶ *Illinois Renewables*, *supra* note 8.

¹⁰⁷ *Id.*

¹⁰⁸ See U.S. ENVTL. PROT. AGENCY, ANYWHERE THE SUN SHINES: DEVELOPING SOLAR ENERGY ON CONTAMINATED LAND (2009), available at http://www.epa.gov/oswercpa/docs/solarmarket_analysis_overview.pdf. “For ARES, a minimum of 60% of the renewable energy must come from wind power, and the remaining amounts (40%) can come from other eligible renewables.” *Illinois Renewables*, *supra* note 8.

¹⁰⁹ *Illinois Renewables*, *supra* note 8.

¹¹⁰ See *id.*

¹¹¹ See *id.*

¹¹² *Id.*

¹¹³ *Id.*

¹¹⁴ Revenue derived from ACPs are placed in the IPA’s Renewable Energy Resources Fund to be used for the purchase of RECs. *Id.*

generation and distribution as usual while accounting for the environmental externalities associated with generation from non-renewable sources.¹¹⁵

The RPS requires RECs to be purchased from in-state sources first, then surrounding states, and finally all states.¹¹⁶ Through 2011, eligible resources must be located in-state, provided the sources are cost-effective.¹¹⁷ Resources can be procured from adjoining states if in-state sources are too expensive.¹¹⁸ If in-state or adjoining states are not cost-effective, RECs from other regions of the country are then eligible.¹¹⁹ After 2011, all RECs with Illinois and adjoining states are given equal preference provided they are cost-effective.¹²⁰ Other regions can be considered eligible if Illinois and the adjoining states are too expensive.¹²¹

Two tests are used to consider whether a resource is cost-effective.¹²² First, retail prices cannot be more than 0.5% of what was remitted per kWh during the year previous to the RPS.¹²³ "The cost cap changes each year through 2011, when it is the greater of an additional 0.5% of the amount paid per kWh during the year ending in 2010, or 2% of the amount paid per kWh during the year ending May, 2007."¹²⁴ In 2012, "the cost is limited to the greater of 2.015% of the amount per kWh paid in 2007 or the incremental amount paid in 2011."¹²⁵ The cap will be reviewed by the Illinois Commerce Commission in 2011 to ensure there are no undue constraints in the acquisition of renewable energy.¹²⁶ The second test requires that

Thus the IPA central procurement model used for bundled sales from electric utilities effectively extends to at least 50% (and possibly more) of the load served by ARES. The ACP rate fluctuates from year to year based on the results of IPA procurement events. For the first compliance year (June 1, 2009, to May 31, 2010) the ACP is \$0.645/MWh for ARES operating in Ameren territory and \$0.764/MWh for ARES operating in Commonwealth Edison territory.

Illinois Renewables, *supra* note 8.

¹¹⁵ See DAVID G. LOOMIS & JENNIFER HINMAN, ILL. STATE UNIV. CTR. FOR RENEWABLE ENERGY, ECONOMIC IMPACT: WIND ENERGY DEVELOPMENT IN ILLINOIS 10 n.6 (2010), available at <http://renewableenergy.illinoisstate.edu/wind/publications/2010%20FINAL%20NEW%20Economic%20Impact%20Report.pdf>.

¹¹⁶ *Illinois Renewables*, *supra* note 8.

¹¹⁷ *Id.*

¹¹⁸ *Id.*

¹¹⁹ *Id.*

¹²⁰ *Id.*

¹²¹ *Id.*

¹²² *Illinois Renewables*, *supra* note 8.

¹²³ *Id.*

¹²⁴ *Id.*

¹²⁵ *Id.*

¹²⁶ *Id.*

procurement costs be less than certain benchmarks.¹²⁷ These benchmarks are set by the IPA and not made public, but they are “based on market prices for renewable energy resources in the region”¹²⁸

II. THE MANY OBJECTIVES OF AN RPS

Advocates for the RPS stated many benefits that would come from the standard.¹²⁹ Howard A. Learner, Executive Director of the Environment Law and Policy Center and a major advocate for the RPS, is quoted as stating that “[d]eveloping wind power, a ‘no-CO₂’ energy source, can help to solve our global warming problems. . . . Renewable energy is good for farmers, good for rural economic development and good for the environment. Furthermore, implementing robust energy efficiency programs will provide long-term bill savings for Illinois ratepayers while improving the environment.”¹³⁰

A study prepared for the DCEO examined the impact of a similar RPS of sixteen percent by 2020, starting in 2006 and increasing by about one percent each year.¹³¹ Because of the similar policies, we use this study to compare the predicted impacts with the true impacts of the current RPS.¹³² The predicted benefit for job creation was 1800 new jobs in the renewable energy business sector by 2012, 7800 new jobs in renewable energy development, and 191,000 new jobs by 2020.¹³³ Emissions reduction was predicted to be 108,750 tons of SO_x by 2009, 51,378 tons of NO_x by 2009, and 23.6 million tons of CO₂ by 2009.¹³⁴ Installed cumulative generating capacity was predicted to grow to 1969 MW by 2009.¹³⁵ Total delivered renewable energy in 2009 was predicted to be approximately 7.5 million MWh.¹³⁶

¹²⁷ *Id.*

¹²⁸ *Illinois Renewables*, *supra* note 8.

¹²⁹ *See, e.g., Illinois House Overwhelmingly Passes Renewable Energy Standard*, PRNEWswire (May 3, 2007), <http://www.michigangreen.org/article62.html>.

¹³⁰ *Clean Energy Standards in Rate Bill Expected to Bring Environmental and Economic Windfall to Illinois*, PRNEWswire (Aug. 2, 2007), <http://www.prnewswire.com/news-releases/clean-energy-standards-in-rate-bill-expected-to-bring-environmental-and-economic-windfall-to-illinois-57818732.html>.

¹³¹ BOURNAKIS ET AL., *supra* note 8, at 7, 20.

¹³² *See id.* at 77–78.

¹³³ *Id.* at 2, 77.

¹³⁴ *Id.* at 65–67.

¹³⁵ *Id.* at 23.

¹³⁶ *Id.* at 20.

Finally, the RPS is predicted to have an impact on both the retail price of electricity and REC prices.¹³⁷ Fischer shows that the impact of the RPS on electricity prices depends on the relationship and ability to substitute between renewable energy sources and natural gas markets.¹³⁸ If natural gas prices decline enough, then the prices may actually decrease.¹³⁹

REC prices are predicted to rise as the standard increases.¹⁴⁰ A binding standard implies that there will be a value for credits.¹⁴¹ As the standard increases, the demand for RECs increases as does REC prices.¹⁴² However, supply opposes the forces of demand.¹⁴³ As the supply of renewable energy increases and more RECs are created, a decrease in supply costs will cause price to decrease.¹⁴⁴ The overall impact of the RPS on REC prices depends on the magnitude of the increased demand for RECs and the decreasing cost to supply renewable energy.¹⁴⁵

III. THE IMPACT OF ILLINOIS'S RPS

The growth of renewable energy caused by the RPS can be seen in the sources utilized by the major distributing utilities.¹⁴⁶ Figure 1 shows the sources of energy used by AmerenIP and Commonwealth Edison from 2001 to 2008.¹⁴⁷ AmerenIP began using more wind energy in the last two years, trading off hydroelectric for more wind.¹⁴⁸ Commonwealth Edison began using biomass in 2003 but has not increased its use since.¹⁴⁹ Since the implementation of the RPS, Commonwealth Edison began using wind energy and some hydroelectric, but neither is greater than one percent of its total energy.¹⁵⁰ Commonwealth Edison and

¹³⁷ FISCHER, *supra* note 15, at 1–2.

¹³⁸ *Id.* at 2–3, 9.

¹³⁹ *Id.* at 2.

¹⁴⁰ *Id.* at 7.

¹⁴¹ *See id.* at 8–9.

¹⁴² *Id.* at 7.

¹⁴³ *See* FISCHER, *supra* note 15, at 5.

¹⁴⁴ *See id.* at 3.

¹⁴⁵ *See id.* at 9.

¹⁴⁶ *See, e.g., ICC Environmental Disclosure Statements*, ILL. COMMERCE COMM'N, <https://www.icc.illinois.gov/electricity/environmentaldisclosure.aspx> (last visited Nov. 8, 2010) (The Illinois Commerce Commission collects environmental disclosure statements from the utilities. Environmental disclosure forms describe the different sources of energy used by AmerenIP, Commonwealth Edison, and the ARES.).

¹⁴⁷ *See infra* Figure 1.

¹⁴⁸ *See infra* Figures 1, 3(a), 3(b).

¹⁴⁹ *See infra* Figure 3(b).

¹⁵⁰ *See infra* Figure 3(b).

AmerenIP have also increased their use of natural gas since the implementation of the RPS.¹⁵¹

Renewable energy growth comes in different forms: the growth of capital experienced through more capacity and the growth of output experienced through more generation. We can compare the growth capacity and generation for non-hydroelectric renewable sources in Illinois by examining Figure 2.¹⁵² Generation for non-hydroelectric renewable sources has been on the rise in Illinois since 1997.¹⁵³ The impact of the RPS can be seen best through the increase in capacity since starting in 2007.¹⁵⁴ Compared to the DCEO study, capacity in 2007 has increased at a faster rate than predicted, while generation has already exceeded the predicted amount.¹⁵⁵

A. *Comparison to Surrounding States*

We also examine growth in Illinois by comparing the renewable energy growth in comparable states. Several of the surrounding states have similar renewable energy resources, as well as other policies that encourage the use of renewable energy.¹⁵⁶ Comparing the states, we can see how generation competes under different policies.

According to the Database of State Incentives for Renewables and Efficiency, twenty-nine states have a standard and six have a renewable goal.¹⁵⁷ Of the states surrounding Illinois, Missouri, Iowa, Minnesota, Wisconsin, and Michigan have an RPS.¹⁵⁸ Indiana and Kentucky do not have an RPS.¹⁵⁹ Additionally, we examine North Dakota, which has a large amount of wind potential, but requires more transmission lines¹⁶⁰

¹⁵¹ See *ICC Environmental Disclosure Statements*, *supra* note 146 (follow the links to see ComEd and AmerenIP use of natural gas since the implementation of the RPS).

¹⁵² See *infra* Figure 2.

¹⁵³ See *infra* Figure 2.

¹⁵⁴ See, e.g., *Illinois Electricity Profile*, U.S. ENERGY INFO. ADMIN. (2010), http://www.eia.doe.gov/cneaf/electricity/st_profiles/illinois.pdf (table 4) (Data on generation and capacity were from the Energy Information Administration (“EIA”). The data examines the total electric industry including electric utilities and Independent Power Providers.).

¹⁵⁵ Compare *id.*, with BOURNAKIS ET AL., *supra* note 8, at 20.

¹⁵⁶ See *Wind Maps and Wind Resource Potential Estimates*, *supra* note 31; *Rules, Regulations & Policies for Renewable Energy*, DATABASE OF STATE INCENTIVES FOR RENEWABLES AND EFFICIENCY, <http://www.dsireusa.org/summarytables/rrpre.cfm> (last visited Nov. 8, 2010).

¹⁵⁷ See DATABASE OF STATE INCENTIVES FOR RENEWABLES AND EFFICIENCY, *supra* note 1.

¹⁵⁸ *Id.*

¹⁵⁹ *Id.*

¹⁶⁰ See *North Dakota Wind Facts*, NAT’L WIND, <http://www.nationalwind.com/north>

and has only a renewable goal.¹⁶¹ Table 3 shows the different policies in the states surrounding Illinois.¹⁶² States have enacted policies at various times over the last decade.¹⁶³ Iowa was the first to enact a policy that requires the utilities to own or contract for a specific amount of capacity¹⁶⁴ rather than purchase RECs or generate renewable electricity to meet a proportion of sales.¹⁶⁵ Wisconsin was also an early adopter of an RPS.¹⁶⁶ For the first four years of enforcement, utilities were only required to maintain the status quo,¹⁶⁷ and the standard began to increase in 2010.¹⁶⁸

Also impacting renewable generation is the status of a state's deregulation.¹⁶⁹ In contrast to Illinois, most states have not restructured and do not offer retail choice to the consumers.¹⁷⁰ We can compare Illinois to the growth in states that have not restructured, such as Wisconsin, Indiana, North Dakota, and Iowa, as shown in the last column of Table 3.¹⁷¹

Figure 1 shows the generation from different renewable sources for Illinois.¹⁷² Before 2008, total renewable generation followed the

_dakota_wind_facts (last visited Nov. 8, 2010).

¹⁶¹ *North Dakota Incentives/Policies for Renewables & Efficiency*, DATABASE OF STATE INCENTIVES FOR RENEWABLES & EFFICIENCY (last updated July 16, 2010), http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=ND04R&re=1&ee=1 [hereinafter *North Dakota Renewables*]. A renewable goal is similar to a renewable energy standard, but compliance is not mandatory. *Id.*

¹⁶² *See infra* Table 3.

¹⁶³ *See infra* notes 164–68.

¹⁶⁴ *See Iowa Renewables*, *supra* note 4.

¹⁶⁵ *See Wind Energy Policy, Transmission & Regulation*, AM. WIND ENERGY ASS'N, <http://web.archive.org/web/20070713080812/www.awea.org/policy/rpsmechfed.html> (accessed by inputting main website and utilizing the Internet Archive index).

¹⁶⁶ *Wisconsin Incentives/Policies for Renewables & Efficiency*, DATABASE OF STATE INCENTIVES FOR RENEWABLES & EFFICIENCY, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=WI05R&re=1&ee=1 (last updated May 20, 2010).

¹⁶⁷ *Id.*

¹⁶⁸ *Id.*

¹⁶⁹ *See ENERGY INFO. ADMIN., U.S. DEPT OF ENERGY, CHALLENGES OF ELECTRIC POWER INDUSTRY RESTRUCTURING FOR FUEL SUPPLIERS 70 (1998)*, available at http://www.eia.doe.gov/pub/electricity/chg_str_fuel.pdf.

¹⁷⁰ The states that have restructured include Oregon, Texas, Michigan, Illinois, Ohio, Pennsylvania, Maryland, New Jersey, New York, Connecticut, Massachusetts, New Hampshire, Maine, Delaware, Rhode Island, and the District of Columbia. *Status of Electricity Restructuring by State*, U.S. ENERGY INFO. ADMIN. (May 2010), http://www.eia.doe.gov/cneaf/electricity/page/restructuring/restructure_elect.html. The rest are either not restructuring or have suspended it. *Id.*

¹⁷¹ *See infra* Table 3.

¹⁷² *See infra* Figure 1.

gaseous renewable sources.¹⁷³ After 2008, total renewable generation began following the generation from wind sources.¹⁷⁴ Thus, a shift in renewable sources toward wind energy is apparent.

Using Figure 4, we compare Indiana's renewable generation to Illinois.¹⁷⁵ Indiana does not have an RPS,¹⁷⁶ and most of its renewable generation between 2004 and 2008 has come from waste heat from coal plants, other fossil resources, and conventional hydroelectric turbines.¹⁷⁷ In April 2008, Indiana began its first commercial operation of wind generation with a 130.5 MW wind farm.¹⁷⁸ Five more wind farms were built in 2009.¹⁷⁹ One operation sells RECs to Duke Energy customers,¹⁸⁰ suggesting that wind energy growth is possible without an RPS. On the other hand, such RECs could also be sold to Illinois distributing utilities to fulfill their RPS requirement.¹⁸¹ This suggests that Indiana is benefiting from Illinois's RPS, a tax and subsidy-like policy, taxing Illinois non-renewable power, and subsidizing Indiana's renewable power.¹⁸²

Figure 5 shows the generation from different renewable sources for North Dakota.¹⁸³ Compared to Illinois, North Dakota has more transmission difficulties, being located farther away from major load centers.¹⁸⁴ North Dakota has a voluntary RPS, which implies that a renewable goal is set but not mandatory or enforced.¹⁸⁵ In 2007, North Dakota's neighboring state, Minnesota, enacted a stringent RPS with thirty percent by 2020 with twenty-four percent of coming from wind.¹⁸⁶ Before 2006, North

¹⁷³ *Id.*

¹⁷⁴ *Id.*

¹⁷⁵ See *infra* Figure 4.

¹⁷⁶ Ohler & Radusewicz, *supra* note 82, at 68.

¹⁷⁷ See *Indiana Renewable Electricity Profile*, ENERGY INFO. ADMIN., http://www.eia.doe.gov/cneaf/solar.renewables/page/state_profiles/indiana.html (last visited Nov. 8, 2010) (follow the pdf link for various pertinent tables).

¹⁷⁸ See *U.S. Wind Energy Projects—Indiana*, AM. WIND ENERGY ASS'N, <http://www.awea.org/projects/Projects.aspx?s=Indiana> (last visited Sept. 19, 2010).

¹⁷⁹ *Id.*

¹⁸⁰ *Id.*; see also DUKE ENERGY, DUKE ENERGY'S RENEWABLE & CLEAN ENERGY INITIATIVES (2010), available at <http://www.duke-energy.com/pdfs/Renewable-Clean-Energy-Initiatives-Fact.pdf>.

¹⁸¹ See *Illinois Renewables*, *supra* note 8.

¹⁸² Ohler & Radusewicz, *supra* note 82, at 69.

¹⁸³ See *infra* Figure 5.

¹⁸⁴ See Michael T. Burr, *Windpower: Beyond Boom and Bust*, PUB. UTIL. FORT., May 2005, at 28, 34, available at <http://www.pur.com/pubs/4536.cfm>.

¹⁸⁵ See *North Dakota Renewables*, *supra* note 161.

¹⁸⁶ See *Minnesota Incentives/Policies for Renewables & Efficiency*, DATABASE OF STATE

Dakota's renewable energy trended with hydroelectric generation.¹⁸⁷ After 2006, its renewable energy trended with wind generation, suggesting a shift in renewable sources.¹⁸⁸ The growth in wind suggests a benefit from a neighboring RPS and that, even with difficulties of transmission, wind energy can still grow.¹⁸⁹

Iowa has also experienced substantial wind growth as shown in Figure 6.¹⁹⁰ Iowa has had renewable energy programs in some form since 1991 and now mandates that the utility companies own or contract for a specific amount of renewable capacity.¹⁹¹ Wind energy generation should have been growing over the last decade, but Iowa only experienced growth after 2004.¹⁹² In fact, Iowa may be benefitting from neighboring states' wind.¹⁹³ More likely, Iowa was able to increase wind generation because it had experience and knowledge of how to install wind farms and how to get the technology running.¹⁹⁴ Comparing this type of RPS to Illinois's RPS shows that both types can encourage the development and growth of wind energy by assisting the industry in its infancy and getting people familiar with the technology and how it fits in the transmission grid.¹⁹⁵

While renewable generation has grown, overall generation in Illinois has also grown with few exceptions.¹⁹⁶ We account for increased generation by looking at the proportion of generation capacity that is renewable and the proportion of generation that comes from renewable sources.

INCENTIVES FOR RENEWABLES & EFFICIENCY, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=MN14R&re=1&ee=1 (last updated June 16, 2010).

¹⁸⁷ See *infra* Figure 5.

¹⁸⁸ See *infra* Figure 5.

¹⁸⁹ See *supra* notes 183–88.

¹⁹⁰ See *infra* Figure 6.

¹⁹¹ See *Iowa Renewables*, *supra* note 4; IOWA CODE ANN. § 476.8 (West 1990) (requiring public utilities to have programs to encourage the utilization of renewable energy).

¹⁹² See *infra* Figure 6.

¹⁹³ See *supra* notes 183–88 (a similar inference can be drawn for Iowa, which had a renewable policy since 1991, but only experienced growth in wind after 2004).

¹⁹⁴ Iowa has experience and knowledge with respect to installation of wind farms and necessary technology because it has been running multiple wind projects since 1992. See *U.S. Wind Energy Projects—Iowa*, AM. WIND ENERGY ASS'N, <http://www.awea.org/projects/Projects.aspx?s=Iowa> (last visited Sept. 19, 2010).

¹⁹⁵ RPS, in general, is one of the most critical drivers of the growth in the wind energy industry. See *generally State RPS' Lead to 250% Market Growth by 2025*, RENEWABLE ENERGY WORLD (July 2, 2010), <http://www.renewableenergyworld.com/rea/news/article/2010/07/state-rps-lead-to-250-market-growth-by-2025>.

¹⁹⁶ See *Electric Power and Renewable Generation in Illinois*, U.S. DEP'T OF ENERGY, <http://apps1.eere.energy.gov/states/electricity.cfm/state=IL#total> (last updated June 25, 2008).

Figures 7 and 8 show the proportion of renewable capacity and generation in Illinois and the surrounding states.¹⁹⁷ While Illinois has grown in the proportion of renewable capacity and generation, Iowa and North Dakota began their growth much earlier.¹⁹⁸ Iowa has had an RPS with a mandated contracted capacity, and North Dakota has one with a voluntary RPS.¹⁹⁹ Thus, the growth in wind overall may be due more to the increased demand for environmentally friendly sources and the increased knowledge and experience with wind turbines than from the RPS.²⁰⁰ Wisconsin provides more evidence for this point.²⁰¹ This state has had an RPS with several years of experience but has not seen much growth in terms of proportion of capacity or generation from renewable sources.²⁰²

B. Emissions

In the last decade, Illinois has experienced some declines in emissions, but the suggested impact from the RPS has not come.²⁰³ Figures 9(a), (b), and (c) show the change in CO₂, SO₂, and NO_x for electric utilities and the entire power industry.²⁰⁴ Carbon dioxide has not experienced a decline overall, but the electric utilities have begun emitting fewer emissions.²⁰⁵ The reductions by utilities may be mostly attributed in the divestiture of generating power plants.²⁰⁶ The electricity sector in Illinois was also restructured in this time period.²⁰⁷ A lot of the utilities divested their generation assets,²⁰⁸ and much of their previous emissions are now counted in the total power industry but are no longer considered part of

¹⁹⁷ See *infra* Figures 7, 8.

¹⁹⁸ See *infra* Figures 7, 8.

¹⁹⁹ See *Iowa Renewables*, *supra* note 4; *North Dakota Renewables*, *supra* note 161.

²⁰⁰ See LOOMIS & HINMAN, *supra* note 115, at 12.

²⁰¹ See *State Energy Profiles—Wisconsin*, U.S. ENERGY INFO. ADMIN., http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=WI (last updated Nov. 4, 2010).

²⁰² See *infra* Figures 7, 8. Wisconsin's RPS has only begun to be binding. *Wisconsin Incentives/Policies for Renewables & Efficiency*, *supra* note 166. For the years 2006, 2007, 2008, and 2009, the RPS only required the utilities to maintain the status quo by not decreasing its renewable-energy percentage below its average of 2001, 2002, and 2003. *Id.*

²⁰³ *Illinois Electricity Profile*, *supra* note 154; see *Iowa Renewables*, *supra* note 4.

²⁰⁴ See *infra* Figures 9(a), 9(b), 9(c).

²⁰⁵ See *infra* Figure 9(a).

²⁰⁶ *Electric Power Industry Overview 2007*, U.S. ENERGY INFO. ADMIN., <http://www.eia.doe.gov/electricity/page/prim2/toc2.html> (last visited Nov. 8, 2010).

²⁰⁷ *Id.*

²⁰⁸ See *id.*

the electric utilities.²⁰⁹ Restructuring accounts for the large decrease in CO₂ emissions by the utilities, but the industry as a whole has not declined.²¹⁰ Compared to the DCEO study, CO₂ emissions by the total electric power industry have not decreased as predicted.²¹¹ This may be due to a delayed impact from switching to renewable energy.²¹²

Sulfur dioxide and nitrogen oxides have experienced declines since the 1990s.²¹³ Examining figures 9(b) and (c), we see that the RPS had no additional impact on emissions in 2007 and 2008.²¹⁴ Compared to the DCEO study, SO₂ and NO_x emissions have not decreased as predicted.²¹⁵ Policies implemented appear to have a greater impact on reducing SO₂ and NO_x emissions.²¹⁶ To date, the RPS appears to have little impact on the level of CO₂, SO₂, and NO_x emissions.²¹⁷

C. Job Growth

The RPS has spurred rapid wind development in the state of Illinois.²¹⁸ Wind power capacity in Illinois has grown from fifty MW in 2003 to 1847.76 MW in 2010.²¹⁹ Table 4 shows the project name, county, and total project capacity for each of the twenty-one wind projects in Illinois.²²⁰ The Mendota Hills Wind Farm and the Crescent Ridge Wind Farm were two of the first three multi-turbine projects to be built in the state.²²¹ Mendota Hills and Crescent Ridge came online in 2003 and 2005,

²⁰⁹ See *infra* Figures 9(a), 9(b), 9(c).

²¹⁰ See *infra* Figure 9(a).

²¹¹ Compare *supra* notes 131–36, with BOURNAKIS ET AL., *supra* note 8, at 67, and *infra* Figure 9(a).

²¹² See, e.g., *supra* notes 191–92 (shows delay in Iowa wind energy generation despite an RPS since 1991).

²¹³ See *infra* Figures 9(b), 9(c).

²¹⁴ See *infra* Figures 9(b), 9(c).

²¹⁵ Compare *supra* notes 131–36, with BOURNAKIS ET AL., *supra* note 8, at 65–66, and *infra* Figures 9(b), 9(c).

²¹⁶ See BOURNAKIS ET AL., *supra* note 8, at 74; *Emissions Reduction Market System: A Brief Overview*, ILL. ENVTL. PROT. AGENCY, <http://www.epa.state.il.us/air/erms/overview.html> (last visited Nov. 13, 2010).

²¹⁷ See *supra* notes 203–15.

²¹⁸ LOOMIS & HINMAN, *supra* note 115, at 12–13.

²¹⁹ *Id.* at 6.

²²⁰ See *infra* Table 4.

²²¹ See *U.S. Wind Energy Projects—Illinois*, AM. WIND ENERGY ASS'N, <http://web.archive.org/web/20080405221616/www.awea.org/projects/Projects.aspx?s=Illinois> (accessed by inputting main website and utilizing the Internet Archive index).

respectively.²²² These projects were built long before the Illinois RPS was passed and were influential in proving that wind energy was economically viable in Illinois.²²³ Before that time, many people thought that Illinois did not have a sufficient wind resource to build large wind farms in a cost-effective manner.²²⁴ Two factors changed this popular opinion. First, the wind resource in Illinois turned out to be much greater than shown by near-ground wind maps.²²⁵ Second, wind turbine technology advanced so that newer turbines could produce electricity at much lower wind speeds.²²⁶ While these factors might have been known in theory, it was not until Mendota Hills and Crescent Ridge were built that Illinois policymakers took wind energy seriously.²²⁷

Most wind farms built in Illinois since Mendota Hills and Crescent Ridge have a greater power capacity than those two early wind farms.²²⁸ The average wind farm built in Illinois since 2005 is over 100 MW or roughly double the capacity of Mendota Hills and Crescent Ridge.²²⁹ Illinois is also home to the largest wind farm east of the Mississippi River—Twin Groves Wind Farm with a capacity of 396 MW.²³⁰ Figure 10 shows the annual increases in wind energy capacity in Illinois.²³¹ Illinois is sixth in the United States in installed wind capacity as of July 2010.²³²

The Center for Renewable Energy at Illinois State University conducted a study to examine the economic impact of wind energy.²³³ The

²²² *Id.*

²²³ See *Illinois Renewables*, *supra* note 8; LOOMIS & HINMAN, *supra* note 115, at 6, 10, 21 (explaining the economic viability of wind energy in Illinois).

²²⁴ See generally LOOMIS & HINMAN, *supra* note 115, at 12 (explaining the developments assisting in the proliferation of wind energy in Illinois).

²²⁵ See *id.* at 12–13.

²²⁶ See *id.* at 12.

²²⁷ See *supra* notes 220–26.

²²⁸ See LOOMIS & HINMAN, *supra* note 115, at 21 (listing wind farms, power capacity, and related information).

²²⁹ See *id.* (listing data).

²³⁰ See *id.* at 7 (showing that Twin Groves Wind Farm was built in two phases, each with a capacity of 198 MW); AM. WIND ENERGY ASS'N, AMERICAN WIND ENERGY ASSOCIATION ANNUAL WIND INDUSTRY REPORT: YEAR ENDING 2008, 14 tbl.5 (2009), available at <http://www.awea.org/documents/reports/AWEA-Annual-Wind-Report-2009.pdf> (listing the largest wind farms by state and power capacity).

²³¹ See *infra* Figure 10.

²³² See AM. WIND ENERGY ASS'N, AWEA MID-YEAR 2010 MARKET REPORT 4 (2010), available at <http://www.awea.org/documents/reports/2Q10.pdf> (listing the top states by wind energy capacity).

²³³ See generally LOOMIS & HINMAN, *supra* note 115.

study used detailed cost and project information supplied by each of the wind developers/owners.²³⁴ This information was used as input for the Jobs and Economic Development Impacts ("JEDI") model developed as part of a project of the National Renewable Energy Laboratory.²³⁵

The JEDI Wind Energy Model is an input-output model that measures the spending patterns and location-specific economic structures that reflect expenditures supporting varying levels of employment, income, and output. . . . In essence, JEDI reveals how purchases of wind project materials not only benefit local turbine manufacturers but also the local industries that supply the concrete, rebar, and other materials. The JEDI model uses construction cost data, operating cost data, and data relating to the percentage of goods and services acquired in the state to calculate jobs, earnings, and economic activities that are associated with this information. The results are broken down into the construction period and the operation period of the wind project. Within each period, impacts are further divided into direct, turbine and supply chain (indirect), and induced impacts.²³⁶

According to this economic analysis, 1847.76 MW of wind generating capacity in the state of Illinois created approximately 9968 full-time equivalent jobs during construction periods and supports approximately 494 permanent jobs in rural Illinois areas during the twenty-five years following construction.²³⁷ These permanent jobs include 110 jobs on the wind farm (mostly operations and maintenance technicians) and 384 indirect and induced jobs that are created due to the increased economic activity.²³⁸ These wind farms also support local economies by generating \$18 million in annual property taxes and \$8.3 million annually in extra income for Illinois landowners who lease their land to the wind farm developer.²³⁹ The additional tax revenues from wind farm are especially welcome by school districts because they do not bring additional students

²³⁴ *Id.* at 21.

²³⁵ *Id.* at 17.

²³⁶ *Id.* (citation omitted).

²³⁷ *See id.* at 7, 24.

²³⁸ *Id.* at 7, 15.

²³⁹ LOOMIS & HINMAN, *supra* note 115, at 7.

to the district in the way that a new residential housing development would.²⁴⁰ The lease payments are significant to farmers who like the certainty of fixed annual income to help offset the varying revenue from traditional farming operations.²⁴¹ In total, the existing wind farms in Illinois are projected to create an economic benefit of \$3.2 billion over the estimated twenty-five-year life of the projects.²⁴²

D. *The Impact on Prices*

The impact of an RPS on the price of electricity is still unclear. Studies have forecasted the impacts of both state-specific policies and a national standard. Chen et al. reviewed thirty-one of these studies²⁴³ and found that only two predict electricity cost increases over five percent.²⁴⁴ Six studies predicted cost savings to the customers,²⁴⁵ but most of the research has predicted a price between zero and one percent.²⁴⁶ However, the outcomes of these studies depend highly on the methods and assumptions used.²⁴⁷ They found that the median monthly electricity bill impact for residential customer would be an increase of \$0.46, but the impact ranges from saving over five dollars to an increase of over seven dollars per month.²⁴⁸ Looking at historical data and experience rather than predictions, Wiser et al. found that the evidence of an impact on retail electricity

²⁴⁰ *Id.* at 16 (“However, when a wind farm moves to the area, the school district benefits from a large increase in revenue, with no concomitant increase in costs. The new revenues can then be used to enhance the education provided by the school to existing students.”); *cf.* JESSE DUKEMINIER ET AL., PROPERTY 932–33 (6th ed. 2006) (describing the use of exclusionary zoning to limit residential housing in order to provide services such as schools while keeping property taxes low).

²⁴¹ See LOOMIS & HINMAN, *supra* note 115, at 15 (noting that leasing land to wind developers provides landowners with a stable source of income); James B. Whitaker, *The Varying Impacts of Agricultural Support Programs on U.S. Farm Household Consumption*, 91 AM. J. AGRIC. ECON. 569, 570 (2009) (“The instability of income from farm production leads total farm household incomes to vary more from year to year than the incomes of other U.S. households.”).

²⁴² LOOMIS & HINMAN, *supra* note 115, at 7.

²⁴³ Cliff Chen et al., *Weighing the Costs and Benefits of State Renewables Portfolio Standards in the United States: A Comparative Analysis of State-Level Policy Impact Projections*, 13 RENEWABLE & SUSTAINABLE ENERGY REV. 552, 553 (2009).

²⁴⁴ *Id.* at 557.

²⁴⁵ *Id.*

²⁴⁶ *Id.*

²⁴⁷ *Id.* at 557–59.

²⁴⁸ *Id.* at 560.

rates was unclear, but the possibility of lower prices was apparent.²⁴⁹ Other studies have predicted the impacts of a national RPS. The EIA studied a ten and twenty-five percent RPS,²⁵⁰ which is comparable to Illinois's standard.²⁵¹ The agency predicted a price decline for areas with more wind resources and more dependent on natural gas.²⁵² Studies done by the EIA and the Union of Concerned Scientists, under the guise of a national RPS, have found that consumers will experience a cost savings by reducing the demand for fossil fuels, creating competition for dominant fuel sources, and reducing the cost of renewable technologies.²⁵³ Compared to the rest of the nation, portions of the Midwest are predicted to experience the most cost savings, second only to the Southwest region.²⁵⁴

1. Retail Electricity Prices

In Illinois, electricity rates were frozen from 1997 to 2007.²⁵⁵ The average price of electricity across all sectors decreased overall during this period.²⁵⁶ Figure 11 illustrates the decline in electricity prices from 1990 to 2010.²⁵⁷ Noted are the points when the rate freeze was removed and when the RPS standard was enforced.²⁵⁸

Accounting for inflation and the removal of the rate freeze, the RPS has not yet had a significant impact on real electricity prices.²⁵⁹ However,

²⁴⁹ See Ryan Wiser et al., *The Experience with Renewable Portfolio Standards in the United States*, 20 ELECTRICITY J. 8, 17–18 (2007) (listing statistical data and noting mixed results).

²⁵⁰ See ENERGY INFO. ADMIN., DEP'T OF ENERGY, IMPACTS OF A 25-PERCENT RENEWABLE ELECTRICITY STANDARD AS PROPOSED IN THE AMERICAN CLEAN ENERGY AND SECURITY ACT DISCUSSION DRAFT (2009), available at [http://www.eia.doe.gov/oiaf/servicerpt/acesa/pdf/sroiaf\(2009\)04.pdf](http://www.eia.doe.gov/oiaf/servicerpt/acesa/pdf/sroiaf(2009)04.pdf) [hereinafter IMPACTS OF A 25-PERCENT RENEWABLE ENERGY STANDARD]; ENERGY INFO. ADMIN., DEP'T OF ENERGY, ANALYSIS OF A 10-PERCENT RENEWABLE PORTFOLIO STANDARD (2003), available at [http://www.eia.doe.gov/oiaf/servicerpt/rps2/pdf/sroiaf\(2003\)01.pdf](http://www.eia.doe.gov/oiaf/servicerpt/rps2/pdf/sroiaf(2003)01.pdf).

²⁵¹ See *Illinois Renewables*, supra note 8.

²⁵² See IMPACTS OF A 25-PERCENT RENEWABLE ELECTRICITY STANDARD, supra note 250, at 9.

²⁵³ Alan Noguee et al., *The Projected Impacts of a National Renewable Portfolio Standard*, 20 ELECTRICITY J. 33, 38 (2007).

²⁵⁴ See *id.* at 39 tbl.1 (listing data).

²⁵⁵ See supra text accompanying notes 38–45 (discussing Illinois electricity rates).

²⁵⁶ See supra text accompanying notes 38–45, ENERGY INFO. ADMIN., STATE ELECTRICITY PROFILES 2008 83 tbl.8 (2010), available at http://www.eia.doe.gov/cneaf/electricity/st_profiles/sep2008.pdf (listing average retail prices).

²⁵⁷ See *infra* Figure 11.

²⁵⁸ See *infra* Figure 11.

²⁵⁹ See *infra* Figure 11.

as the standard increases to more sizeable constraints, real price may eventually rise, but it depends on the price response of natural gas.²⁶⁰

One facet of Illinois's standard is the requirement that only sales under a fixed-price tariff are included when considering eligibility.²⁶¹ Consumers under a real-time pricing or smart-meter pricing structure are not counted toward the RPS.²⁶² Thus, the utilities have an incentive to switch consumers to different types of rate structures, and under those rate structures, consumers have an incentive to conserve energy.²⁶³ The other effect of these policies may be a decrease in electricity demand and, consequently, electricity prices.²⁶⁴

2. Wholesale Electricity Prices

A recent study conducted on New York's behalf by Summit Blue Consulting looked into the effect New York's RPS has had on wholesale electricity prices, among other things.²⁶⁵ Summit Blue was able to demonstrate, using a simple time-series model, that the RPS in New York did in fact lower wholesale electricity prices and would continue to do so.²⁶⁶ Summit Blue Consulting rationalizes the study's conclusion by citing the Regional Transmission Organization's use of market-clearing prices, wherein the most expensive, "highest priced resource needed, or marginal resource, sets the price for all sellers."²⁶⁷ The idea is that if the amount of renewable generation, which has little variable cost, increases while demand stays the same, the more expensive plants are not needed and "less expensive resources . . . would then set the marginal price, which lowers prices at that time."²⁶⁸ A similar result was found in Texas.²⁶⁹ In theory, this process should work the same way in Illinois,

²⁶⁰ FISCHER, *supra* note 15, at 2.

²⁶¹ Illinois Power Agency Act, Pub. Act 095-0481, § 16-111.5(a) (2007), *available at* <http://www.ilga.gov/legislation/publicacts/95/PDF/095-0481.pdf>.

²⁶² *Id.*

²⁶³ *See supra* notes 261–62.

²⁶⁴ *See supra* notes 261–62.

²⁶⁵ FRANK STERN ET AL., SUMMIT BLUE CONSULTING, LLC, NEW YORK RENEWABLE PORTFOLIO STANDARD MARKET CONDITIONS FINAL REPORT S16–S18 (2009).

²⁶⁶ *Id.* at 4-154 to 4-155.

²⁶⁷ *Id.* at 4-143.

²⁶⁸ *Id.* at 4-144.

²⁶⁹ *See* BRANDON BLOSSMAN ET AL., TUDOR, PICKERING, HOLT & CO., TEXAS WIND GENERATION 2 (2009).

whereby renewable energy lowers overall electricity market prices, but there is no empirical evidence of this effect in Illinois to date.²⁷⁰

3. REC Prices

In Illinois, renewable energy generators sell their electricity into the transmission grid and are given an REC corresponding to the amount of electricity that they produced.²⁷¹ The IPA then buys these RECs from the generators, or third parties that generators have sold them to, and “retires” them to fulfill the utilities’ required purchase of renewable energy for that year.²⁷² Thus, the cost of the RECs purchased by the IPA is a measure of the additional cost of renewable energy above the cost of other generating sources.²⁷³ However, this cost does not take into account the benefits that renewable energy may have on lowering the overall cost of electricity to all consumers.²⁷⁴

Although the benefit to Illinois ratepayers through lower electricity prices is not quantifiable at this time, the cost of the RPS is reflected in the price of the RECs that the IPA procures on behalf of the utilities.²⁷⁵ These prices have varied by service territory and over time.²⁷⁶ Table 5 lists the REC prices in the Commonwealth Edison territory in 2008.²⁷⁷ Because there is a preference for Illinois renewable resources and because there is a mandate to purchase at least seventy-five percent of the REC from wind,²⁷⁸ the table lists each of these categories separately. The prices range from \$35.72 for Illinois wind²⁷⁹ to \$4.25 for non-wind, non-adjointing state RECs.²⁸⁰ This wide price spread surprised many observers but may have been caused by the limited amount of Illinois wind energy that had been built at the time of the auction.²⁸¹ Table 6 shows the REC

²⁷⁰ See *supra* notes 255–60 and accompanying text.

²⁷¹ UNION OF CONCERNED SCIENTISTS, ILLINOIS RENEWABLE PORTFOLIO STANDARD SUMMARY 5 (2008), available at http://www.ucsusa.org/assets/documents/clean_energy/illinois-1.pdf.

²⁷² See *id.*

²⁷³ *Id.* at 4–5.

²⁷⁴ See *id.*

²⁷⁵ See *id.* at 4–5.

²⁷⁶ See *infra* notes 277–91.

²⁷⁷ See *infra* Table 5.

²⁷⁸ See *supra* notes 97–107 and accompanying text.

²⁷⁹ See *infra* Table 5.

²⁸⁰ See *infra* Table 5.

²⁸¹ See *infra* Figure 10 (showing that a significant amount of the annual wind capacity in Illinois was built after the passage of the RPS in 2007, almost doubling after the 2008

prices in Ameren territory for this same year.²⁸² Here, the price for Illinois wind is lower at \$29.32,²⁸³ but it is still much greater than adjoining state, non-wind RECs at \$5.50.²⁸⁴

The REC prices for the 2009 procurement were much lower.²⁸⁵ Table 7 shows the Illinois wind and non-wind REC prices for Commonwealth Edison with all other categories not reported and not used.²⁸⁶ Illinois wind RECs decreased from \$35.72 in 2008 to \$21.13 in 2009,²⁸⁷ and Illinois non-wind RECs decreased from \$21.85 to \$13.69 over the same time period.²⁸⁸ Table 8 lists the Illinois wind and non-wind REC prices for Ameren.²⁸⁹ Illinois wind RECs decrease from \$29.32 in 2008 to \$16.66 in 2009,²⁹⁰ and Illinois non-wind RECs decrease from \$17.50 to \$13.46 over the same time period.²⁹¹

Although the REC procurement results for 2010 are not yet available, the IPA released its RPS spending plan for 2010, which is displayed in Table 9.²⁹² The expected average price per REC (combined wind and non-wind) is \$30.87 for Commonwealth Edison and \$28.34 for Ameren.²⁹³ If these prices are realized, the estimated annual cost of the RPS is \$15.55 per consumer in Commonwealth Edison territory and \$20.49 per consumer in Ameren territory.²⁹⁴

Although retail and wholesale electricity prices have not changed, a positive REC price implies that the RPS is a binding constraint for the utilities.²⁹⁵ The binding constraint suggests that the renewable energy sector is growing.²⁹⁶ By acquiring RECs, utilities are forced to promote and utilize renewable energy. Thus, the RPS creates an REC market that

prices in Table 5).

²⁸² See *infra* Table 6.

²⁸³ See *infra* Table 6.

²⁸⁴ See *infra* Table 6.

²⁸⁵ See *infra* Tables 7, 8.

²⁸⁶ See *infra* Table 7.

²⁸⁷ See *infra* Tables 5, 7.

²⁸⁸ See *infra* Tables 5, 7.

²⁸⁹ See *infra* Table 8.

²⁹⁰ See *infra* Tables 6, 8.

²⁹¹ See *infra* Tables 6, 8.

²⁹² See *infra* Table 9.

²⁹³ See *infra* Table 9.

²⁹⁴ See *infra* Table 9.

²⁹⁵ See FISCHER, *supra* note 15, at 7.

²⁹⁶ See *id.*

accounts for the environmental attributes²⁹⁷ of producing electricity from renewable energy.²⁹⁸

In addition, the IPA initiated a process to procure some of the RECs on a long-term contracting basis in 2010, rather than the annual procurement process used in 2008 and 2009.²⁹⁹ This may provide more stability to the REC market and provide renewable energy providers with firm multi-year pricing that may be needed to build additional generation.³⁰⁰

CONCLUSIONS AND RECOMMENDATIONS

This paper examines Illinois's RPS as a case study for analyzing the many goals of the RPS and the impacts of the RPS. Illinois's standard focuses on encouraging wind generation by requiring seventy-five percent of the standard be generated from wind.³⁰¹ This aspect allows us to focus on the growth of the wind industry. The electricity market in Illinois also allows customers to choose their electricity supplier.³⁰² We analyzed how restructuring has had an impact on the renewable sector.

Some of the predicted impacts from the RPS include increased job growth, reduced emissions, increased reliance on renewable energy, and decreased electricity prices.³⁰³ After looking at the impact of Illinois's RPS, we find that job growth has increased, especially in the wind sector.³⁰⁴ This result is derived from the increased generation from wind energy and the construction and maintenance of more wind turbines in Illinois.³⁰⁵

Two impacts that we did not find evidence to support were a reduction in emissions or a reduction in electricity prices. Environmental

²⁹⁷ See Press Release, New York Power Authority, New York Power Authority Issuing RFP for the Purchase of Environmental Attributes from Renewable Energy Projects in Orange County (Jan. 12, 2010), available at <http://www.nypa.gov/press/2010/100112a.html> (defining environmental attributes as "environmental, social and economic features of renewable energy that can be sold separately from the energy itself").

²⁹⁸ See *Buying Green Power*, U.S. DEPT OF ENERGY, <http://apps3.eere.energy.gov/greenpower/buying/index.shtml> (last visited Nov. 8, 2010).

²⁹⁹ See *Illinois Renewables*, *supra* note 8.

³⁰⁰ See ILL. COMMERCE COMM'N, ILLINOIS POWER AGENCY PETITION FOR APPROVAL OF INITIAL PROCUREMENT PLAN 4, 14 (2009), available at <http://www.icc.illinois.gov/docket/files.aspx?no=09-0373&docID=144971&m=0> (follow "Final Order" hyperlink).

³⁰¹ See *supra* notes 106–07 and accompanying text.

³⁰² See *supra* notes 38–45 and accompanying text.

³⁰³ See *supra* Part II.

³⁰⁴ See *supra* notes 237–38 and accompanying text.

³⁰⁵ LOOMIS & HINMAN, *supra* note 115, at 15.

legislation creating a cap-and-trade market has caused much of the SO₂ and NO_x decrease in the last decade.³⁰⁶ The electricity sector in Illinois was also restructured in this time period.³⁰⁷ Many of the utilities divested their generation assets,³⁰⁸ and much of their previous emissions are now counted in the total power industry, but they are no longer considered part of the electric utilities.³⁰⁹ Restructuring accounts for the large decrease in emissions by the utilities and the lack of reduction for the industry as a whole.³¹⁰

From Illinois's experience, several lessons can be learned when considering a national RPS. First, policymakers should be careful what is counted as renewable. In Illinois, landfill gas, a questionable resource,³¹¹ was included in the early RPS requirements.³¹² Landfill gas has not grown much, suggesting that those firms are getting paid more to generate electricity they were already producing.

Next, Illinois's RPS has not yet affected emissions.³¹³ A gradually increasing standard is more common and may account for this result.³¹⁴ We conclude that quick results from the RPS cannot be expected in terms of job growth and emissions. They take a long time to appear, if at all.

Finally, it remains uncertain whether renewable growth would occur without the standard, as some of the standards in the United States are not binding.³¹⁵ One major benefit of the RPS in Illinois is that utilities are encouraged to consider alternative energy sources and diversify their portfolio.³¹⁶ Consequently, this has encouraged the growth of renewable energy, created better-defined property rights for siting

³⁰⁶ See *supra* Part III.B.

³⁰⁷ See *Illinois Renewables*, *supra* note 8.

³⁰⁸ See *Electric Power Industry Overview 2007*, *supra* note 206.

³⁰⁹ See *infra* Figures 9(a), 9(b), 9(c).

³¹⁰ See *infra* Figures 9(a), 9(b), 9(c).

³¹¹ See *Landfill Gas*, U.S. ENERGY INFO. ADMIN., http://www.eia.doe.gov/cneaf/solar_renewables/page/landfillgas/landfillgas.html (last visited Nov. 8, 2010) (explaining the process of extracting and converting landfill gas into energy). Environmentalists disagree on what constitutes renewable energy. See John Arnold McKinsey, *Regulating Avian Impacts Under the Migratory Bird Treaty Act and Other Laws: The Wind Industry Collides with One of its Own, the Environmental Protection Movement*, 28 ENERGY L. J. 71, 74 (2007).

³¹² *Illinois Renewables*, *supra* note 8.

³¹³ See *supra* Part III.B.

³¹⁴ See *supra* Part III.A.

³¹⁵ See *supra* notes 23–27 and accompanying text.

³¹⁶ See BOURNAKIS ET AL., *supra* note 8, at 1.

wind farms, created REC markets, supported smart grid upgrades, and informed utilities and policymakers of the problems with transmission in Illinois.

The greatest example of the benefit of an RPS is the creation of the wind industry in Illinois. Even though wind is one of the lowest cost sources, before the RPS was enacted, securing low-cost financing and interconnection proved difficult.³¹⁷ The creation of REC markets gave wind generators more output to sell and could guarantee more revenue.³¹⁸ Wind developers were then able to secure better financing.³¹⁹ The RPS helped to build several new wind projects and spur the development in its infancy.

³¹⁷ See Marnin Lebovits, *Illinois' Green Energy Finance Initiative*, RENEWABLE ENERGY WORLD N. AM. MAG. (Mar. 2, 2010), <http://www.renewableenergyworld.com/rea/news/article/2010/03/illinois-green-energy-finance-initiative>; K. CORY ET AL., NAT'L RENEWABLE ENERGY LAB., INNOVATIONS IN WIND AND SOLAR PV FINANCING 17 (2008), available at <http://www.nrel.gov/docs/fy08osti/42919.pdf>.

³¹⁸ See RYAN WISER & STEVEN PICKLE, ERNEST ORLANDO LAWRENCE BERKELEY NAT'L LAB., FINANCING INVESTMENTS IN RENEWABLE ENERGY: THE ROLE OF POLICY DESIGN AND RESTRUCTURING 50 (1997), available at <http://eetd.lbl.gov/ea/emp/reports/39826.pdf>. As Wisser and Pickle explain, the stability in financing leads to a long-term revenue stream, which in turn funds the development of renewable energy. *Id.* Because the REC market adds to a steady stream of revenue, it helps create more facilities which generate more output and thus provides the certainty needed to ensure developers and investors their money is well spent. *See id.*

³¹⁹ See CORY, *supra* note 317, at 17.

This page intentionally left blank.

Figure 1—Renewable Generation by Source in Illinois

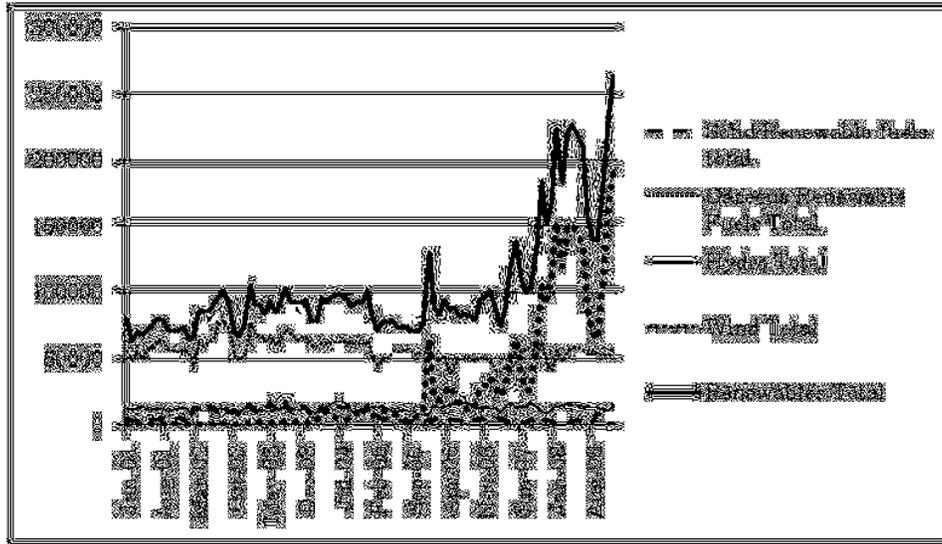


Figure 2—Non-Hydroelectric Renewable Generation and Capacity for Illinois's Electric Industry

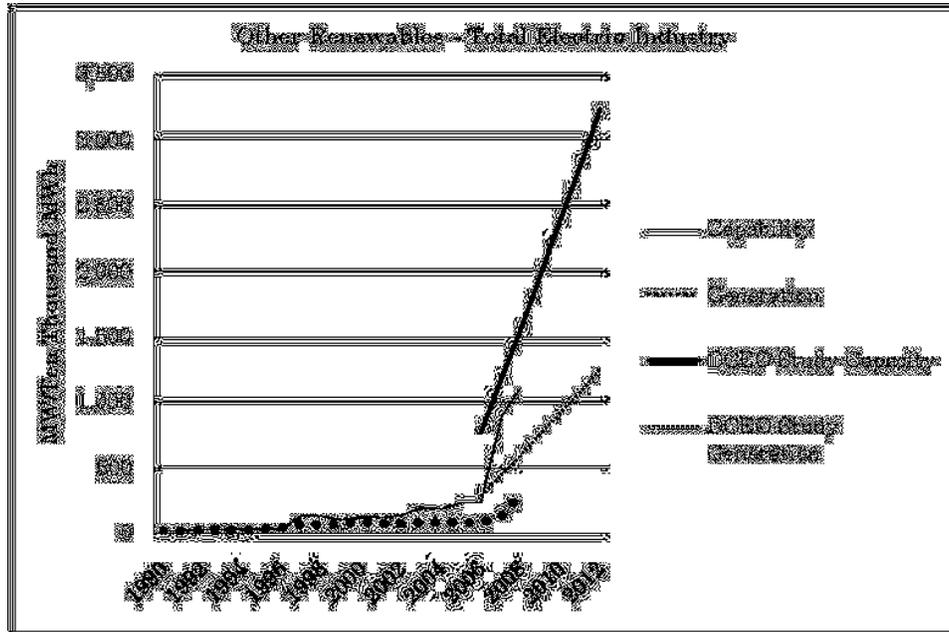


Figure 3(a)—Energy Sources for AmerenIP

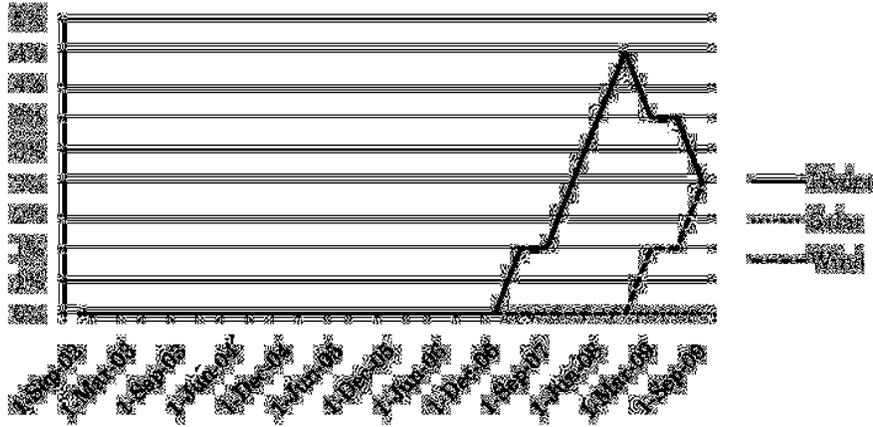


Figure 3(b)—Energy Sources for Commonwealth Edison

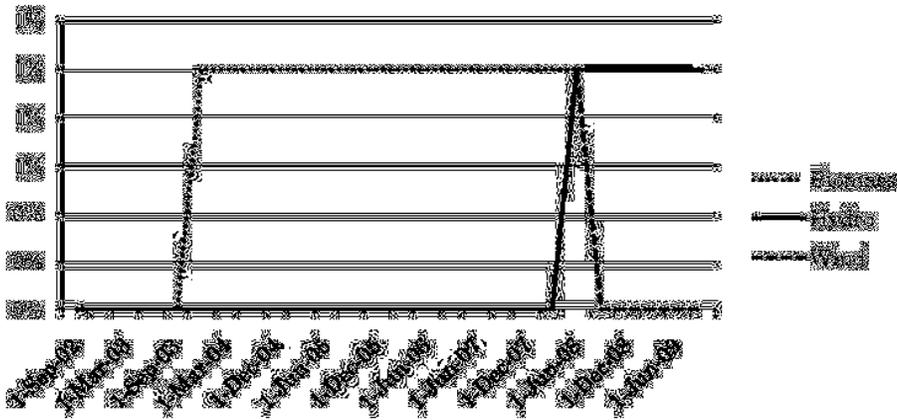


Figure 4—Renewable Generation by Source in Indiana

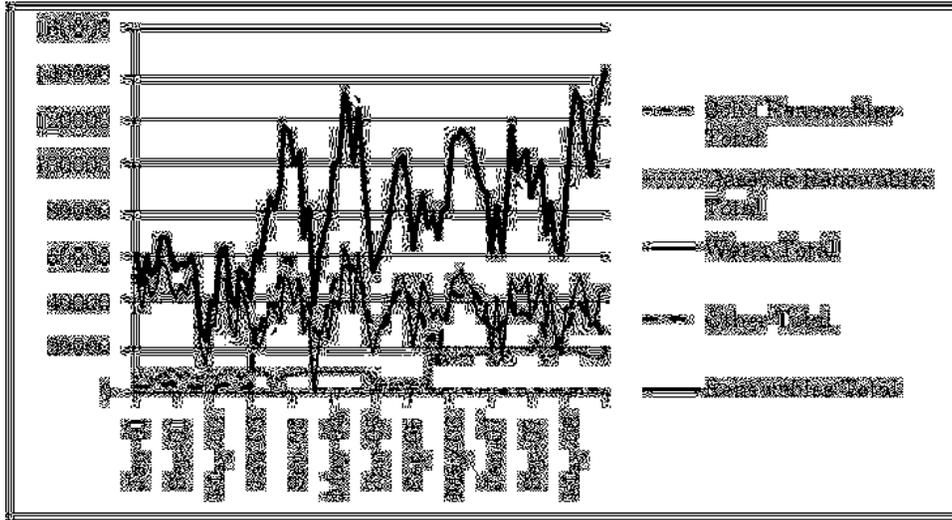


Figure 5—Renewable Generation by Source in North Dakota

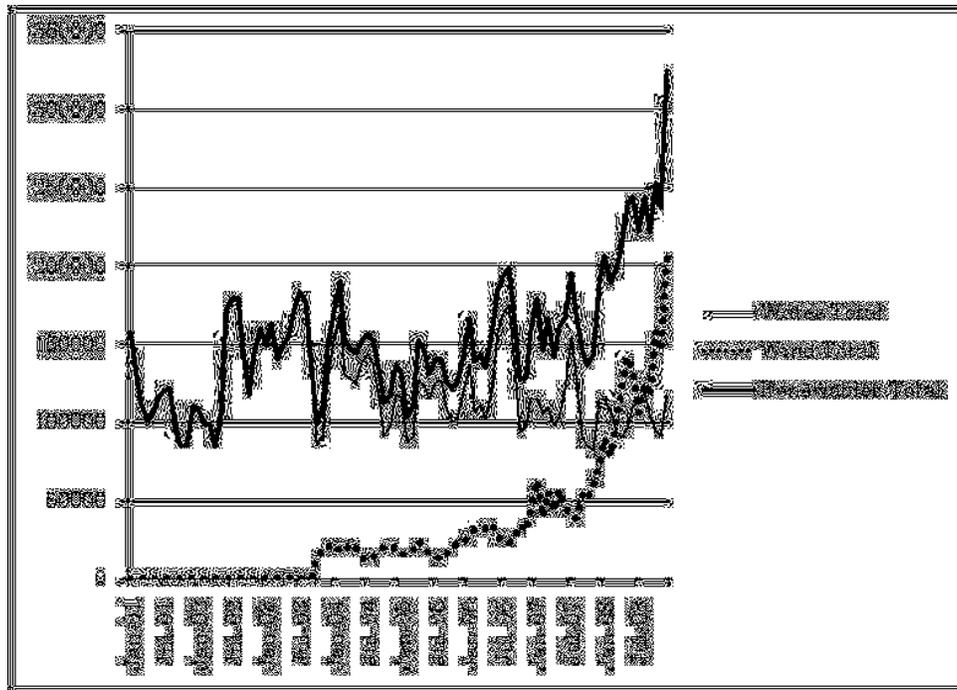


Figure 6—Renewable Generation by Source in Iowa

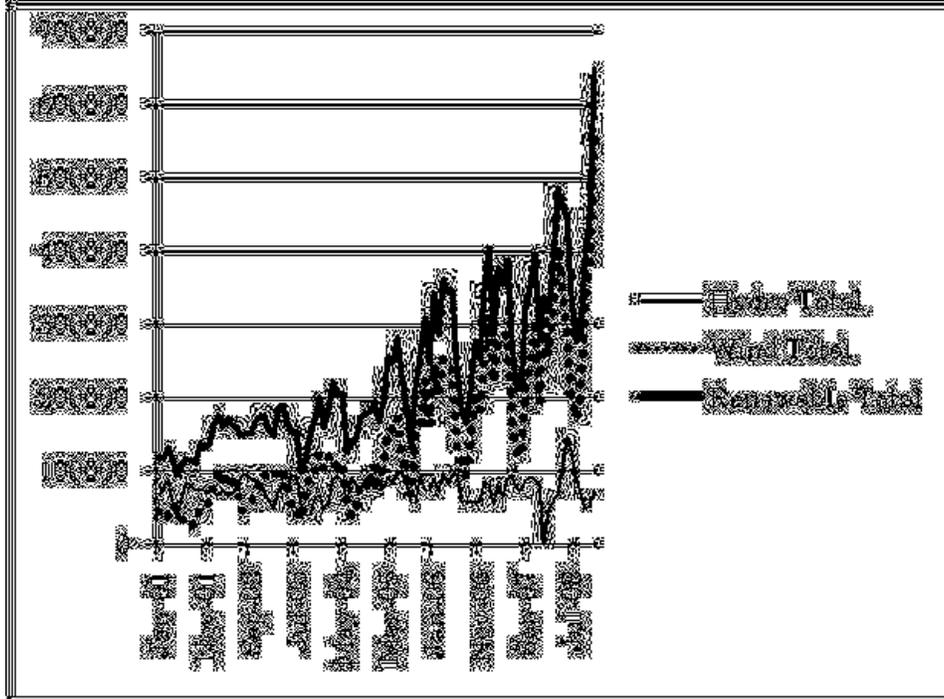


Figure 7—Proportion of Renewable Capacity by State

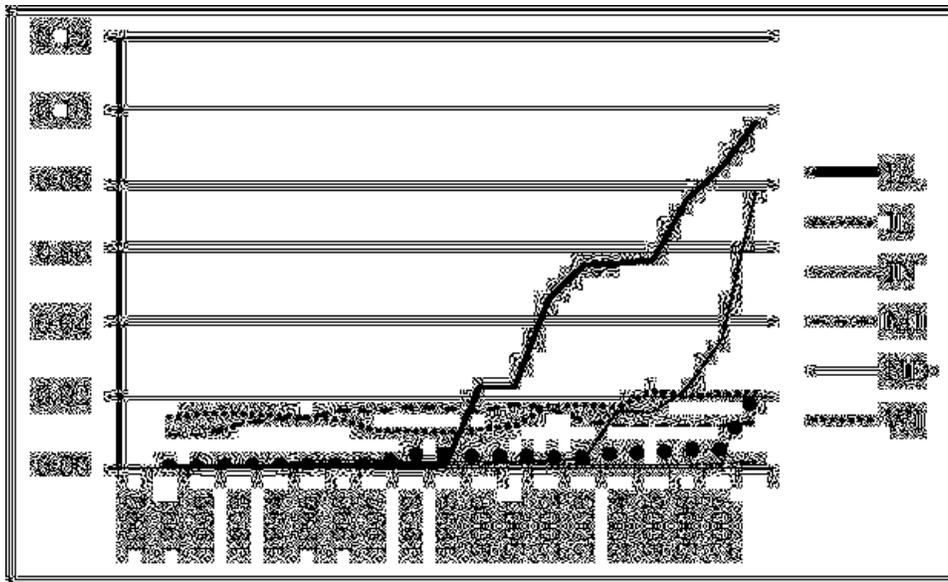


Figure 8—Proportion of Renewable Generation by State

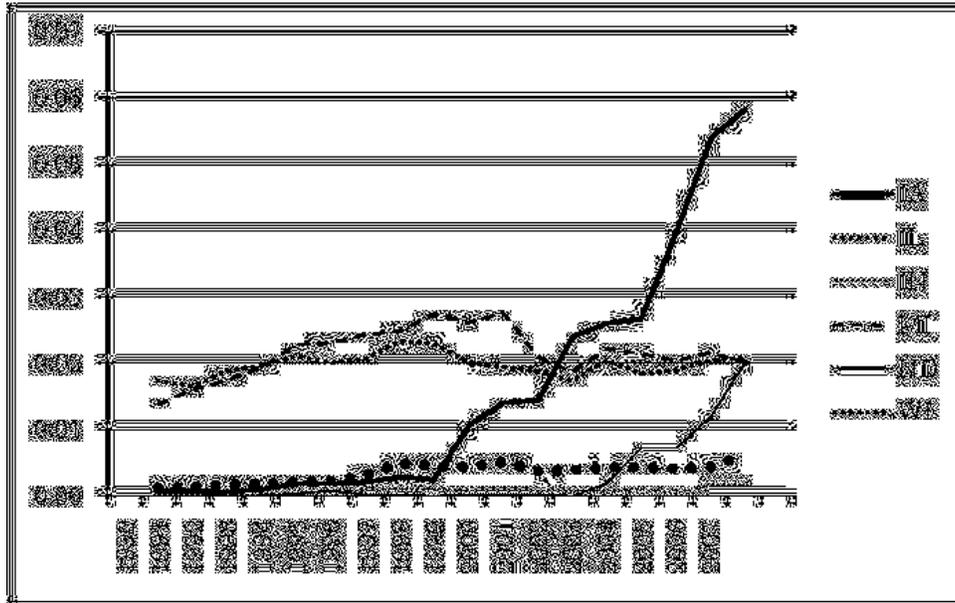


Figure 9(a)—Emissions for the Electricity Industry from 1990–2008: Carbon Dioxide

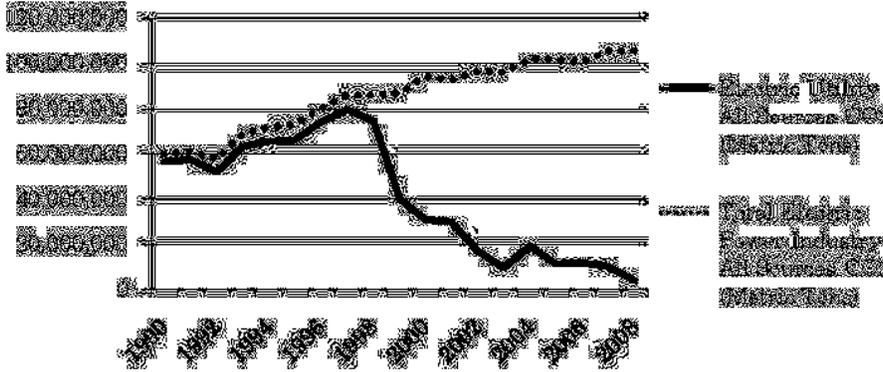


Figure 9(b)—Emissions for the Electricity Industry from 1990–2008: Sulfur Dioxide

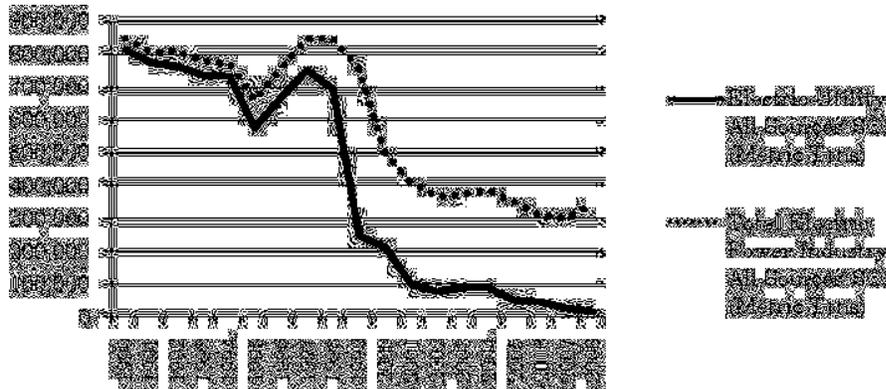


Figure 9(c)—Emissions for the Electricity Industry from 1990–2008: Nitrogen Oxide

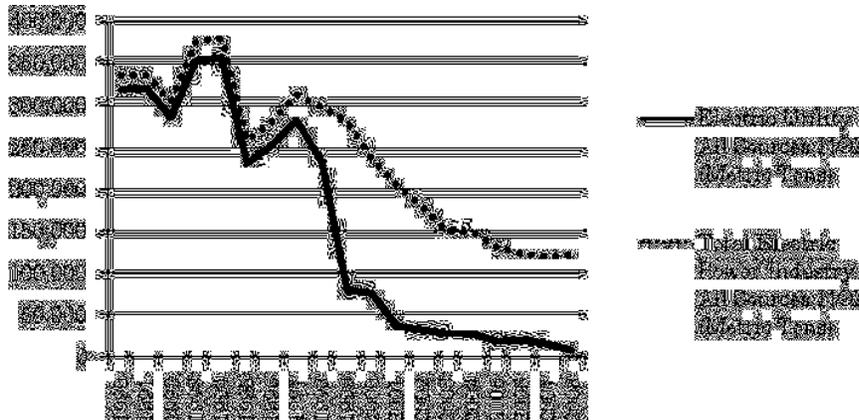


Figure 10—Annual Wind Capacity Additions in Illinois

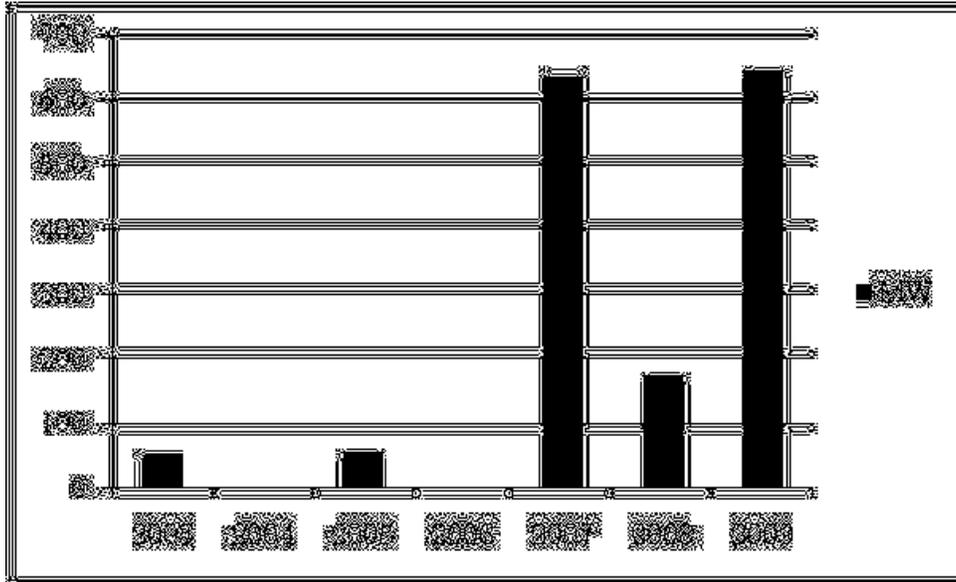


Figure 11—Real Average Price of Retail Electricity Across All Sectors (1990 Dollars)

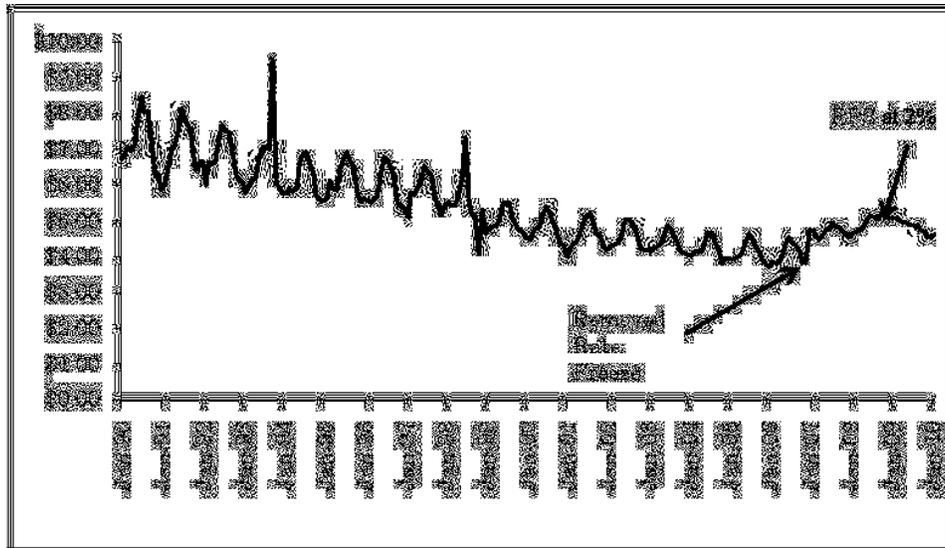


TABLE 1—PERCENTAGE OF NON-RESIDENTIAL CUSTOMERS AND
CUSTOMER LOAD RECEIVING DELIVERY SERVICES, BY DEMAND CLASS
(2008)

Utility/Demand Class	Percentage of Customers Receiving Delivery Services		Percentage of Usage Receiving Delivery Services	
	Under 1 MW	Above 1 MW	Under 1 MW	Above 1 MW
AmerenCILCO	10.1%	92.9%	46.1%	92.0%
AmerenCIPS	6.7%	87.9%	33.5%	97.5%
AmerenIP	8.5%	92%	38.3%	94.3%
Commonwealth Edison	11.2%	93.2%	54.7%	96.7%
MidAmerican	0	0	0	0
Mt. Carmel	0	0	0	0

Source: ILL. COMMERCE COMM'N, RETAIL AND WHOLESALE COMPETITION
IN THE ILLINOIS ELECTRICITY INDUSTRY: FOURTH TRIENNIAL REPORT 5
(2009), available at <http://www.icc.illinois.gov/ormd/>.

TABLE 2—MINIMUM PERCENTAGE FROM RENEWABLE SOURCES³²⁰

Starting Date	Standard	Wind	Solar PV
2008	2%	75%	—
2009	4%	75%	—
2010	5%	75%	—
2011	6%	75%	—
2012	7%	75%	0.5%
2013	8%	75%	1.5%
2014	9%	75%	3%
2015	10%	75%	6%
2016	11.5%	75%	6%
2017	13%	75%	6%
2018	14.5%	75%	6%
2019	16%	75%	6%
2020	17.5%	75%	6%
2021	19%	75%	6%
2022	20.5%	75%	6%
2023	22%	75%	6%
2024	23.5%	75%	6%
2025	25%	75%	6%

Source: *Illinois Incentives/Policies for Renewable Energy*, DATABASE OF STATE INCENTIVES FOR RENEWABLES AND EFFICIENCY, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=IL04R&re=1&ee=1 (last updated Aug. 27, 2010).

³²⁰ Compliance is through a fiscal year, so the year starts June 1. See Illinois Power Agency Act, Pub. Act 095-0481, § 1-75(c)(1) (2007), available at <http://www.ilga.gov/legislation/publicacts/95/PDF/095-0481.pdf>.

TABLE 3—RENEWABLE ENERGY STANDARDS IN ILLINOIS AND THE SURROUNDING STATES³²¹

State	Final Target	Initial Year	Eligible Sources	Applicable Sectors	Retail Choice
IL	25% by 2025	2007	Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Biodiesel	Investor-Owned Utility, Retail Supplier	Yes
MO	15% by 2021	2008	Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Anaerobic Digestion, Small Hydroelectric, Fuel Cells using Renewable Fuels	Investor-Owned Utility	No
MN	25% by 2025 Xcel: 30% by 2020	2007	Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Municipal Solid Waste, Hydrogen, Co-Firing, Anaerobic Digestion	Municipal Utility, Investor-Owned Utility, Rural Electric Cooperative	No
WI	10% by 2015 (goal)	1999	Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Geothermal Electric, Tidal Energy, Wave Energy, Fuel Cells Using Renewable Fuels	Municipal Utility, Investor-Owned Utility, Rural Electric Cooperative	No
MI	10% by 2015	2008	Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Geothermal Electric, Municipal Solid Waste, CHP/Cogeneration, Coal-Fired w/CCS, Gasification, Anaerobic Digestion, Tidal Energy, Wave Energy	Municipal Utility, Investor-Owned Utility, Rural Electric Cooperative, Retail Supplier	Yes
IN	None				No
KY	None				No

³²¹ Retail choice implies state has deregulated the generation sector. Electricity consumers can choose their electricity generator, but transmission and distribution remains with the incumbent firm, a regulated monopolist.

State	Final Target	Initial Year	Eligible Sources	Applicable Sectors	Retail Choice
ND	10% by 2015 (goal)	2007	Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Geothermal Electric, Hydrogen, Electricity from Waste Heat, Anaerobic Digestion	Municipal Utility, Investor-Owned Utility, Rural Electric Cooperative	No
IA	105 MW	1983	Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Municipal Solid Waste, Anaerobic Digestion	Utility—55.2 MW for MidAmerican and 49.8 MW for Alliant	No

Source: DATABASE OF STATE INCENTIVES FOR RENEWABLES & EFFICIENCY, <http://www.dsireusa.org> (click on desired state, scroll down, then click on “Renewable Portfolio Standard”); *see also* THE BELMONT ELECTRICITY SUPPLY STUDY COMMITTEE, RETAIL CHOICE STUDY 20 (2004), *available at* <http://www.hks.harvard.edu/hepg/Papers/LaCapra.Belmont.MA.retail.study.0604.pdf> (contains a map on consumer retail choice).

TABLE 4—ILLINOIS WIND FARM PROJECTS

PROJECT	LOCATION (COUNTY)	CAPACITY (MW)
Streator Cayuga Ridge South	Livingston	300.00
Lee-Dekalb	Lee and Dekalb	217.50
Twin Groves Wind Farm Phase I	McLean	198.00
Twin Groves Wind Farm Phase II	McLean	198.00
Camp Grove Wind Farm	Marshall and Stark	150.00
Grand Ridge II, III, IV	LaSalle	111.00
EcoGrove Wind Farm Phase I	Stephenson	100.50
Rail Splitter Wind Farm	Logan and Tazewell	100.50
Top Crop I	LaSalle	100.50
Grand Ridge Wind Farm Phase I	LaSalle	99.00
GSG Wind Farm	Lee and LaSalle	80.00
Providence Heights Wind Farm	Bureau	72.00
Crescent Ridge Wind Farm	Bureau	54.45
Mendota Hills Wind Farm	Lee	50.40
Agriwind Wind Farm	Bureau	8.40
Turbine Adam	Lee	2.50
Illinois Rural Electric Cooperative	Pike	1.65
Erie Community Unit School District #1	Whiteside	1.20
Gob Nob	Montgomery	0.90
Bureau Valley School District	Bureau	0.66
Sherrard High School	Rock Island and Mercer	0.60
	TOTAL	1,847.76

Source: DAVID G. LOOMIS & JENNIFER HINMAN, ILL. STATE UNIV. CTR. FOR RENEWABLE ENERGY, ECONOMIC IMPACT: WIND ENERGY DEVELOPMENT IN ILLINOIS 21 (2010), *available at* <http://renewableenergy.illinoisstate.edu/wind/publications/2010%20FINAL%20NEW%20Economic%20Impact%20Report.pdf>.

TABLE 5—REC PRICES IN 2008 IN COMMONWEALTH EDISON TERRITORY

Com Ed	Wind RECs	Non-Wind RECs
Illinois	\$35.72	\$21.85
Adjoining State	\$18.35	\$ 5.74
Other State	\$ 7.34	\$ 4.25

Source: ILL. COMMERCE COMM'N, 2008 COMED RENEWABLE ENERGY CREDITS RFP PROCUREMENT PUBLIC NOTICE OF WINNING BIDDERS AND AVERAGE PRICES (2008), *available at* <http://www.icc.illinois.gov/electricity/procurementprocess.aspx>.

TABLE 6—REC PRICES IN 2008 IN AMEREN TERRITORY

Ameren	Wind RECs	Non-Wind RECs
Illinois	\$29.32	\$17.50
Adjoining State	\$21.20	\$ 5.50
Other State	\$ 5.65	N/A

Source: ILL. COMMERCE COMM'N, 2008 AMEREN RENEWABLE ENERGY CREDITS RFP PROCUREMENT PUBLIC NOTICE OF WINNING BIDDERS AND AVERAGE PRICES (2008), *available at* <http://www.icc.illinois.gov/electricity/procurementprocess.aspx>.

TABLE 7—REC PRICES IN 2009 IN COMMONWEALTH EDISON TERRITORY

Commonwealth Edison	Wind RECs	Non-Wind RECs
Illinois	\$21.13	\$13.69
Adjoining State	N/A	N/A
Other State	N/A	N/A

Source: EVOLUTION MARKETS, REC MARKETS—MAY 2009 MONTHLY MARKET UPDATE (2009), *available at* http://new.evomarkets.com/pdf_documents/REC%20Monthly%20Market%20Update.pdf.

TABLE 8—REC PRICES IN 2009 IN AMEREN TERRITORY

Ameren	Wind RECs	Non-Wind RECs
Illinois	\$16.66	\$13.46
Adjoining State	N/A	N/A
Other State	N/A	N/A

Source: *Id.*

TABLE 9—PROJECTED 2010 RPS SPENDING PLAN

	Commonwealth Edison	Ameren
RPS Volume Target (MWh)	1,887,014	860,860
Renewable Energy Resource Budget	58,247,099	24,394,776
Average Price per Renewable Unit	\$30.87	\$28.34
Estimated Consumers Covered by RRB	3,746,747	1,190,808
Estimated Annual RPS Cost/Consumer	\$15.55	\$20.49

Source: ILL. POWER AGENCY, DRAFT PROCUREMENT PLAN TO THE ILLINOIS COMMERCE COMMISSION 41, 54 (2009), *available at* <http://www.icc.illinois.gov/docket/files.aspx?no=09-0373&docId=139785> (follow “Attachment” hyperlink).