State of Illinois

Illinois Commence Commission

Illinois Sustainable Energy Initiative

ICC Staff Report

July 7, 2005

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Executive Summary

On February 11, 2005, Governor Blagojevich sent a letter to Illinois Commerce Commission ("Commission" or "ICC") Chairman Hurley concerning the Governor's vision with respect to increasing Illinois' utilization of renewable energy, demand response and energy efficiency. Immediately, the Commission began a process ("the Sustainable Energy Initiative") to determine how to make the Governor's vision a reality, within the context of the Commission's jurisdiction. The Governor's recommended plan generated many questions. To begin finding the answers, on March 2, 2005, the Commission issued a "Request for Public Comment Concerning the Implementation of Governor Blagojevich's Proposal for a Sustainable Energy Plan for Illinois." In addition, the Commission organized a set of workshops to discuss the issues in more depth.

The Staff of the Illinois Commerce Commission ("Staff") has been charged with producing a set of recommendations for the Commission's consideration. The purpose of this report is to address the various issues surrounding the procurement of renewable energy, demand response, and energy efficiency programs. It is intended to provide economic policy guidance rather than legal guidance. The report addresses separately (1) renewable energy and (2) demand response and energy efficiency programs. However, Staff's recommendations in these two areas are similar. In both cases, Staff recommends that the Commission pursue a policy of encouraging voluntary participation by electric public utilities as well as certified alternative retail electric providers ("ARES"), as defined in the Public Utilities Act ("Act"). In both cases, Staff recommends that the Commission adopt a rate impact test to guard against participating utilities placing excessive reliance on resources that are uncompetitive at current prices. Finally, Staff recommends that utilities be subject to the same requirements concerning arms-length transactions whether they are acquiring conventional electric supply resources or renewable or energy efficiency resources.

Overview of Renewable Energy Section

Consistent with the Governor's recommendations and the Illinois Renewable Energy, Energy Efficiency, and Coal Resources Development Law of 1997, Staff recommends that "renewable energy resources" include energy produced from:

- wind
- solar thermal energy
- photovoltaic cells and panels
- dedicated crops grown for energy production and organic waste biomass
- methane recovered from landfills
- hydropower that does not involve new construction or significant expansion of hydropower dams, and
- other such alternative sources of environmentally preferable energy;

but that eligible "renewable energy resources" exclude energy from the incineration, burning or heating of waste wood, tires, garbage, general household, institutional and

commercial waste, industrial lunchroom or office waste, landscape waste, or construction or demolition debris.

Staff's recommended overall renewable goals are very similar to those proposed by the Governor, except that Staff proposes to postpone the start of the program until 2007, for reasons explained in this report. More specifically, Staff's proposed time-table for adding renewable resources is as follows:

Year	***Percent of Electric Energy Sales Met with Renewable Energy***
2007	**2%**
2008	**3%**
2009	**4%**
2010	**5%**
2011	**6%**
2012	**7%**
2013 +	**8%**

In Staff's view, the above voluntary guidelines will help Illinois reap the benefits of renewable power, including the potential for renewable power to provide a hedge against rising fossil fuel prices and to reduce the amount of pollutants released by the burning of fossil fuels.

Staff's proposed rate impact test is designed to protect ratepayers from paying excessive amounts to obtain the above-cited benefits of renewable power. In particular, Staff proposes that expenditures on renewable energy should not be permitted to increase retail rates by more than a half a percent in any one year or by more than 2 percent cumulatively.

Staff also recommends against the Commission taking an active role in developing a system of renewable energy credits ("RECs"), at this time. Staff notes that, with a voluntary renewable portfolio standard, there is a limited need for REC trading. However, if a REC trading system is put in place by the Regional Transmission Organizations ("RTOs") that serve Illinois (namely, PJM and Midwest ISO), or by some federal authority, then such an off-the-shelf REC trading system could be used by participants to help minimize their cost of meeting the guidelines set forth herein.

Overview of Demand Response and Energy Efficiency Section

The potential benefits for the State to encourage demand response and energy efficiency are similar to those noted above in relation to renewable energy. To reap these benefits, Staff proposes a set of voluntary guidelines similar to those recommended by the Governor, except that Staff proposes to postpone the start of the program until 2007, for reasons explained in the report. More specifically, Staff's proposed time-table with respect to demand response and energy efficiency resources is as follows:

Time Period	***Demand and Energy Reduction Target***
Years 2007 to 2008	**10% of Projected Annual Load Growth**
Years 2009 to 2011	**15% of Projected Annual Load Growth**
Years 2012 to 2014	**20% of Projected Annual Load Growth**
Years 2015 to 2017	**25% of Projected Annual Load Growth**

Staff's proposed rate impact test is designed to protect ratepayers from paying excessive amounts for demand response and energy efficiency programs. Staff recommends that Commission announce a maximum percentage rate increase per year of 0.5% that the Commission would be willing to tolerate in order to obtain the above-cited load reductions. Staff also recommends that the test be computed separately for each rate class for which demand response and energy efficiency programs are available, and that it should be based on the total annual bill for a typical customer within the class.

Next Steps

Staff recommends that the Commission adopt a resolution accepting this report and authorizing its distribution.

List of Workshop Participants

Stakeholder Organizations

Alliant Energy
Ameren Companies
Association (ICAA)
BAI
Center for Neighborhood Technology
Chicago Climate Exchange
Chicago Department of the Environment
Chicago Green Power Foundation
Citizens Utility Board (CUB)
City of Chicago
Commonwealth Edison (ComEd)
Community Energy Cooperative
Comverge Enterprises
Constellation New Energy
Consulting Energy Economist
Demand Response & Advanced Metereing Coaltion
Department of Commerce and Economic Opportunity (DCEO)
DLA Piper Rudnick Gray Cary
Dynegy, Inc.
Energy Management Inc./ISEA
Energy Resources Center
Energy Systems Group
Enescon
Environmental Law and Policy Center (ELPC)
Evolution Markets, LLC
Exelon Energy
FPC Services - GSG Wind
Gas Technology Institute
GE Energy
GEV Corp.
Giordano & Neilan, Ltd.
Governor Rod Blagojevich's office
GSG Wind
Haller Wind Consulting
Harmony Funding
Illinois Attorney General's Office (AG)
Illinois Commerce Commission (ICC)
Illinois Community Action
Illinois Energy Association (IEA)
Illinois Industrial Energy Consumers (IIEC)
Illinois Landfill Gas Coalition (ILGC)
Illinois Public Interest Research Group
Institute for Regulatory Policy Studies (IRPS)
International Brotherhood of Electrical Workers (IBEW)
Low Income Utility Advocacy Project
Mainstay Energy
MidAmerican Energy Company (MEC)
Midwest Energy Efficiency Alliance (MEEA)
MidWest Generation
Midwest Independent System Operator (Midwest ISO)
Navitas Energy
Nexant, Inc.
Office of Lieutenant Governor Pat Quinn
Peoples Energy Services
PJM Interconnection, LLC
PPM Energy
Primary Energy
Quinn
RETX
SenreQ
Sexton Energy
Shaw Group
Sieben Energy Associates
Spire Solar Chicago
Summit Blue Consulting
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WM Renewable Energy
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Introduction

A. Background

On February 11, 2005, Governor Blagojevich sent a letter to Illinois Commerce Commission ("Commission" or "ICC") Chairman Hurley concerning the Governor's vision with respect to increasing Illinois' utilization of renewable energy, demand response and energy efficiency. Immediately, the Commission began a process ("the Sustainable Energy Initiative") to determine how to make the Governor's vision a reality, within the context of the Commission's jurisdiction. The Governor's recommended plan generated many questions. To begin finding the answers, on March 2, 2005, the Commission issued a "Request for Public Comment Concerning the Implementation of Governor Blagojevich's Proposal for a Sustainable Energy Plan for Illinois." In addition, the Commission organized a set of workshops to discuss the issues in more depth. Convener reports of these workshops were finalized on May 17, 2005. In addition, Illinois utilities were invited to present plans of how they might be able to implement programs broadly consistent with the Governor's proposed sustainable energy initiative.

B. Purpose of this Report

Taking into account the information gathered through the Commission's Sustainable Energy Initiative, the Staff of the Illinois Commerce Commission ("Staff") has been charged with producing a set of recommendations for the Commission's consideration. The purpose of this report is to address the various issues surrounding the procurement of renewable energy, demand response, and energy efficiency programs. It is intended to provide economic policy guidance rather than legal guidance.

C. Summary of the Report

The report addresses separately (1) renewable energy and (2) demand response and energy efficiency programs. However, Staff's recommendations in these two areas are similar. In both cases, Staff recommends the following:

1. The Commission should pursue a policy of encouraging voluntary participation by electric public utilities as well as certified alternative retail electric providers ("ARES"), as defined in the Public Utilities Act ("Act").
2. The Commission should adopt a rate impact test to ensure that participating utilities do not place excessive reliance on resources that are uncompetitive at current prices.
3. Participating utilities should be subject to the same requirements concerning arms-length transactions whether they are acquiring conventional electric supply resources or renewable or energy efficiency resources.

Renewable Energy

A. Eligible Renewable Energy Resources

1. Definitions and Examples

The Governor's proposed sustainable energy plan stated,

> We recommend that only renewable energy resources, as that term is defined in the Renewable Energy, Energy Efficiency, and Coal Resources Development Law of 1997, be eligible to meet the Renewable Portfolio Standard requirements. In addition, energy produced by methane recovered from landfills may be considered a renewable energy resource for the purpose of meeting the Renewable Portfolio Standard requirements.

According to the Renewable Energy, Energy Efficiency, and Coal Resources Development Law of 1997,

> As used in this Law, "renewable energy resources" includes energy from wind, solar thermal energy, photovoltaic cells and panels, dedicated crops grown for energy production and organic waste biomass, hydropower that does not involve new construction or significant expansion of hydropower dams, and other such alternative sources of environmentally preferable energy. "Renewable energy resources" does not include, however, energy from the incineration, burning or heating of waste wood, tires, garbage, general household, institutional and commercial waste, industrial lunchroom or office waste, landscape waste, or construction or demolition debris. [1]

2. Recommendations on Determining Eligible Resources

In Staff's view, the Governor's proposal for determining eligible renewable resources is reasonable and appropriate. As noted above, the Governor's proposal not only includes specifically identified resource types, it also includes "other such alternative sources of environmentally preferable energy." With respect to this catch-all category, Staff recommends that the Commission accept implementation proposals from on a case-by-case basis. Participating firms would be expected to

[1] Most of the forms of renewable energy cited in the Renewable Energy, Energy Efficiency, and Coal Resources Development Law of 1997 are self-explanatory. Note, however, the catch-all category that would enable the Commission to consider "other such alternative sources of environmentally preferable energy." As one possible example, one might conceivably consider electricity generated from steam produced as a byproduct of industrial processes as a renewable energy source. The rationale for this is that the steam is continuously being produced and, unless converted into a more useful form of energy (like electricity), would otherwise be wasted. In this sense, such waste steam is not much different than naturally occurring wind.

present evidence showing that their proposed "alternative sources" are in fact "environmentally preferable."

Putting aside for a moment the concept of interstate trading in "renewable energy credits," Staff also believes it is appropriate to adopt the Governor's proposal "that renewable energy procured to meet the Renewable Portfolio Standard be generated in Illinois or in a directly adjacent serious or severe National Ambient Air Quality Standard non-attainment area as designated by the United States Environmental Protection Agency." The issue of intrastate and interstate trading in renewable energy credits is discussed in section F., below.

3. Proposed Goals

The Governor's proposed goals are to use eligible renewable resources to meet 2% of consumer demand for electricity in 2006, with an additional percentage point each year until reaching the ultimate target of 8% by 2012. Bundled sales plus unbundled delivery services sales, in 2003, for all Illinois utilities regulated by the Commission were about 124,431 gigawatt hours ("GWH").[2] Thus, the initial goal of 2% translates into approximately 2,489 GWH and the eventual goal of 8% translates into approximately 9,954 GWH.[3] A more detailed description of how the Governor's proposal translates into energy units, by utility, with and without net load growth, is shown in Appendix B, attached.

As already noted, there are a variety of resources that theoretically could be used to meet such goals. However, the Governor's proposal would require that wind-power comprise 75% of total renewable energy. Based on presentations provided during the workshops, it seems more than likely that wind power would end up comprising a very large share of an unconstrained least-cost renewable power portfolio. On the other hand, there is no guarantee that this is or will always be the case. For this reason, if, for the time being, the Commission accepts the Governor's proposed 75% wind minimum, this figure should be reexamined in future years.

Staff notes that the Governor's proposed time-table is an ambitious one. Based on information obtained through the workshop process, wind projects in particular could experience near-term bottlenecks, as demand for new large-scale wind turbines apparently has been outpacing their availability. These circumstances are reflected in Staff's proposed timetable. In particular, Staff proposes that the goals begin in 2007 (rather than 2006). Two additional reasons to wait until 2007 are that the price freeze pursuant to the Illinois Electric Service Customer Choice and Rate Relief Law of 1997, as well as the Illinois utilities' related full-requirements contracts with electricity suppliers, do not expire until 2007. Hence, there is no need for additional power supplies and no means to obtain cost recovery for such power supplies until 2007. A more detailed description of how the Staff's proposal

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[2] Note: 1 Gigawatt hour ("GWH") = 1000 Megawatt hours ("MWH") = 1000 Kilowatt hours ("KWH") = 1000 Watt hours (which is the amount of electric energy consumed by a 100 Watt light bulb that has been switched on for ten hours).

[3] Based on 2003 sales, assuming no load growth.

translates into energy units, by utility, with and without net load growth, is shown in Appendix B, attached.

4. Existing Renewable Energy Resources

Data from the Energy Information Administration ("EIA") show that electricity from renewable energy in Illinois in 2003 accounted for about 0.51% of net generation and of nameplate capacity. Additional details are shown below:

2003 Electricity Produced from Renewable Energy in Illinois

(Gigawatt Hours of Net Generation)

	Landfill Gas	Other Biomass Gas	Water	Wind	Total	% of Total Renewable	% of Total Renewable + Non-Renewable
Combined Cycle – Steam Part	63	0	0	0	63	6.54%	0.03%
Combined Cycle Combustion – Turbine Part	88	0	0	0	88	9.15%	0.05%
Combustion (Gas) Turbine (includes jet engine design)	176	130	0	0	305	31.88%	0.16%
Hydraulic Turbine	0	0	138	0	138	14.47%	0.07%
Internal Combustion (diesel, piston) Engine	344	1	0	0	345	36.08%	0.18%
Wind Turbine	0	0	0	18	18	1.88%	0.01%
Total	670	131	138	18	957	100.00%	0.51%
Total Renewable + Non-renewable					189,055		100.00%

2003 Electricity Generation Capacity from Renewable Energy in Illinois

(Megawatts of Nameplate Capacity)

	Landfill Gas	Other Biomass Gas	Water	Wind	Total	% of Total Renewable	% of Total Renewable + Non-Renewable
Combined Cycle – Steam Part	10	0	0	0	10	4.08%	0.02%
Combined Cycle Combustion – Turbine Part	15	0	0	0	15	6.12%	0.03%
Combustion (Gas) Turbine (includes jet engine design)	36	28	0	0	64	26.09%	0.13%
Hydraulic Turbine	0	0	38	0	38	15.64%	0.08%
Internal Combustion (diesel, piston) Engine	67	0	0	0	67	27.48%	0.14%
Wind Turbine	0	0	0	50	50	20.58%	0.11%
Total Renewable	128	28	38	50	245	100.00%	0.51%
Total Renewable + Non-renewable					47,577		100.00%

Source for above tables: 2003 EIA-906/920 Monthly Time Series File (Final 2003 file)

B. Benefits of Renewable Energy Resources

There are numerous private and public benefits associated with increased investment and use of renewable energy resources. These benefits are discussed in this section.

1. Private Benefits

From the perspective of electricity producers and consumers, the benefit of adding renewable energy to the mix of electric generation resources is that it diversifies the portfolio. Thus, it helps mitigate risks of being overly reliant on specific fuels or technologies. One way to view the use of renewable resources is to consider it a type of "hedge."

For example, power production from a renewable resource such as wind entails higher up-front costs but lower operating costs. At today's prices, existing fossil fuel powered electric generating plants may be less expensive to run than the life-cycle cost of new renewable energy facilities. However, fossil fuel prices (particular natural gas prices) are quite volatile. If, over the course of the next 10 or 20 years those prices turn out to be higher than expected, then having a greater capability to produce power with wind could end up being a cheaper alternative. In effect, spending more today to protect against the impact of future scenarios is "hedging." Of course, the need for such investment to be made in advance (as a hedge against future trends) depends on the speed with which such facilities can be built. If a renewable facility requires a long lead time, then there is a greater justification for making the investment in advance. If a renewable facility can be built relatively quickly, then there is less need to make the investment before the higher prices for fossil fuel-powered generation begin to emerge.

2. Public Benefits

Based on comments received by the Commission in the workshop process, using a greater share of renewable energy may be a more environmentally benign way of fueling the Illinois economy, may entail the emission of fewer pollutants harmful to human health, and may help the nation conserve its non-renewable resources (particularly fossil fuels).

In a market economy, economists are generally suspicious of government efforts to favor one form of production or consumption over another. However, whether through subsidies, price ceilings, price floors, taxes, or quotas, governments routinely attempt to influence the allocation of resources. Such efforts can sometimes be justified on sound economic policy grounds, particularly where the private interests of firms and consumers are at odds with the interests of others around them. For instance, where there are "public goods" and "externalities"

associated with production and/or consumption, there can be a failure of market economies to spontaneously lead to an efficient allocation of resources.[4]

A public good is one in which the consumption of a unit of that good by one individual does not exclude the consumption of the same unit by other individuals. It is a well-known and accepted principle of economics that public goods, in an undisturbed market economy, will be under-produced (and under-consumed). That is, the efficient level of production and consumption, below which consumers would still be willing to pay more than it costs to produce, is not reached for public goods. Many (if not all) things bear at least some degree of "publicness." For example, artwork in somebody's office may be viewed mostly by the occupant of the office, but it will also be seen by anybody walking by or into the office, as well. At some point, the degree of publicness in a thing becomes materially important, and it begins to make sense to call it a "public good."

Externalities are a related concept. An externality is basically a by-product of production or consumption, which is not contained by the producer or consumer.[5] Instead, the by-product is experienced by other firms or individuals. For other firms, the externality directly affects their production efforts. For other individuals, the externality is consumed directly or it directly affects the individuals' consumption of other things. There are both positive externalities and negative externalities. A positive externality is one that would increase production of other firms or increase the welfare of other individuals. A negative externality is one that would decrease production of other firms or decrease the welfare of other individuals. For example, someone disposing of their garbage "properly" may also reduce the rat population in the neighborhood. While the rats may not like it, the neighbors might consider this to be a positive externality. In contrast, an individual burning leaves in a suburban community, "produces particulate matter and hydrocarbons, which contain a number of toxic, irritant, and carcinogenic (cancer-causing) compounds," according to the United States Environmental Protection Agency ("EPA").[6] The driver of a car not only produces toxic fumes, but also contributes to highway congestion. These are both examples of what can be considered negative externalities.

The production of electricity also has the potential to produce various negative externality by-products. Due to environmental regulations and improvements in technology, it is probably safe to say that power plant emissions of several targeted pollutants are lower than they would have been otherwise. However, there are still emissions of potentially harmful substances due to the combustion of fuel used to generate power.

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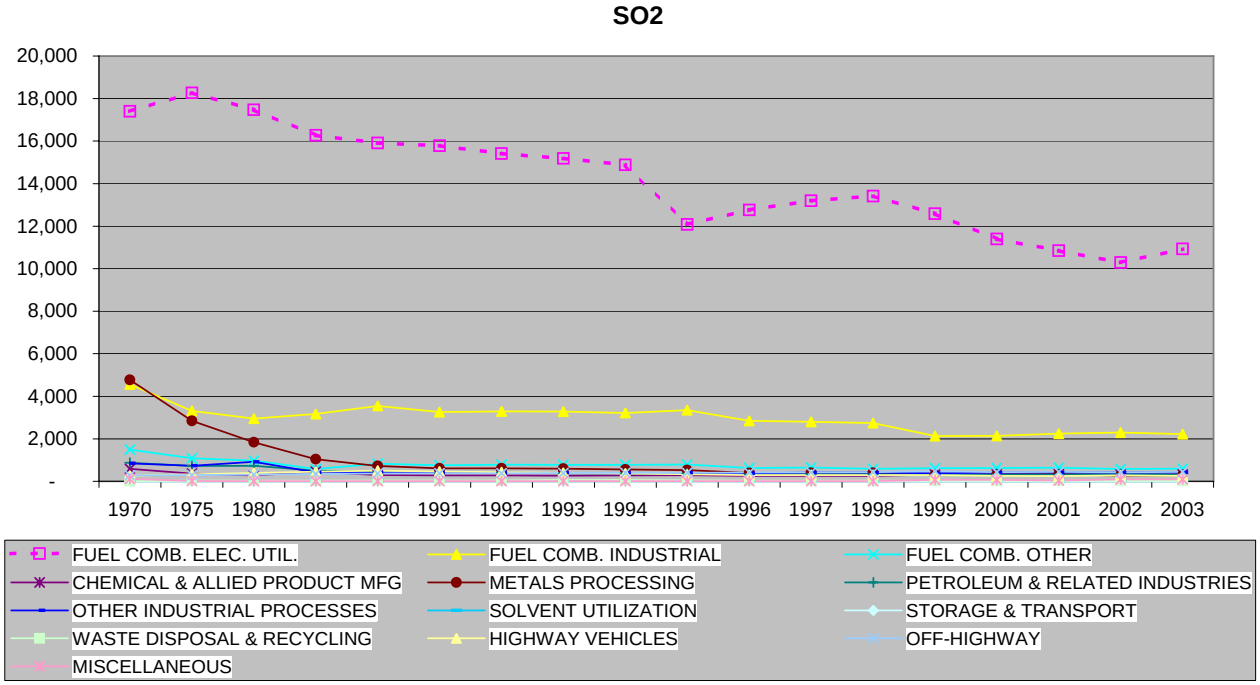
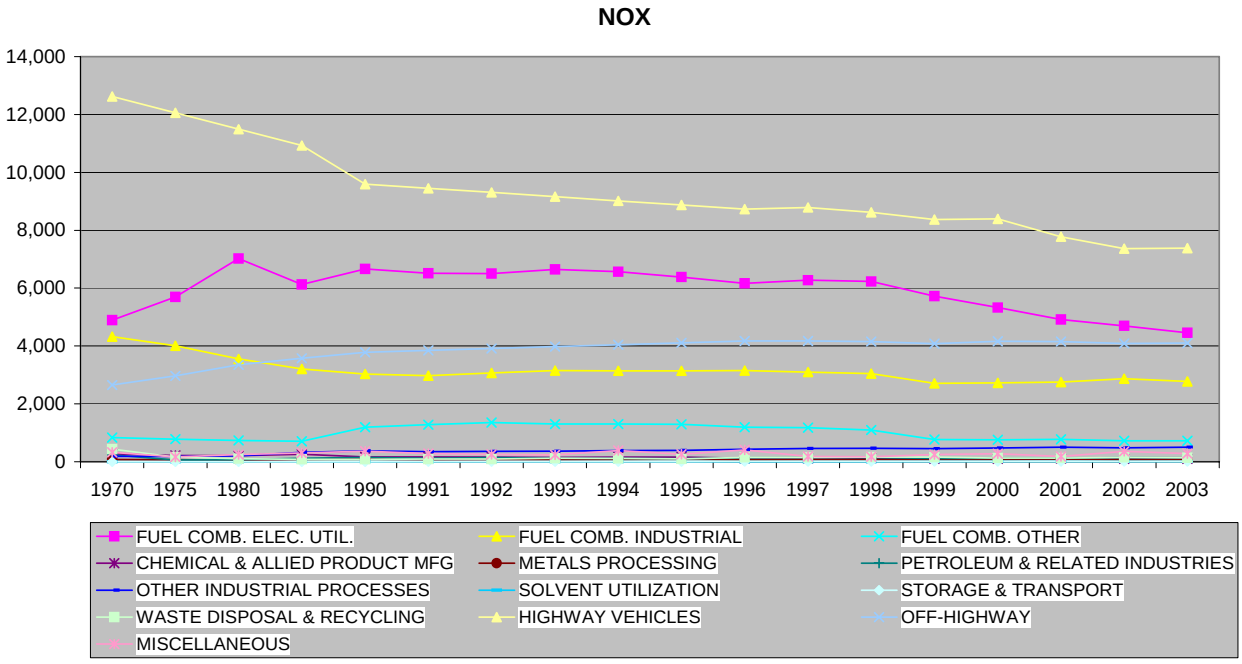
[4] It is not uncommon for economists to use, usually with caveats, the concept of economic efficiency as a valid concept of social welfare and as a legitimate goal of public policy, including public utility regulation. Efficiency is also one of the objectives explicitly mentioned in the Illinois Public Utilities Act (220 ILCS 5/1-102)

[5] In this report, the term "externality" is meant to be synonymous with "real externality," as opposed to a "pecuniary externality." Discussion of the distinction is beyond the scope of this report.

[6] http://es.epa.gov/techinfo/facts/leafburn.html

For example, the following graphs show electric generation's relatively large share of sulfur dioxide (SO2) and nitrogen oxides (NOX) emissions in the United States from 1970 through 2003. These are two of the EPA's "six principal air pollutants."[7]





[7] Data from http://www.epa.gov/airtrends/econ-emissions.html. In these graphs, "Fuel Comb. Elec. Util." stands for emissions due to fuel combustion by electric utilities. Of the other major pollutants (not shown), such as lead and carbon monoxide, electric generation's share is relatively minor.

Of course, SO2 and NOX are just two of many substances that can make their way into the environment through production processes. Furthermore, assessing the harm of such substances is a highly technical scientific endeavor, well beyond the expertise of public utility regulatory agencies, like the ICC.

For this reason, Staff is not recommending that the Commission embark upon any efforts to explicitly quantify and value the potential health or other environmental benefits that may arise from the substitution of various renewable resources in place of more conventional electric power production resources. Instead, it is Staff's position that, guided merely by a ***general*** understanding of the type of health or other environmental benefits that are at stake, the Commission can still set reasonable goals for expanding the use of renewable resources.

Finally, from an extreme long-run standpoint, a shift toward renewable energy can help preserve, for future generations, non-renewable natural resources, such as fossil fuels (e.g., oil, natural gas, and coal). No matter how low the private discount rate of non-renewable resource owners, there is simply no "sustainable" withdrawal rate for such resources. Hence, it is reasonable to expect that some form of government intervention would be required to preserve such resources, or at least prolong their finite availability.

Since such non-renewable resources are commodities traded in national and global markets, it is reasonable to conclude that the best way to address the problem of resources depletion over many generations is through a national and international effort. It is implausible for a single state, acting unilaterally, to have any significant impact on the preservation of non-renewable resources in a national and global market. For example, if Illinois required electricity producers within its borders to reduce significantly their demand for natural gas, the shift in the market demand curve would lead to a lowering in the prices for natural gas. This would lead to an increase in the use of natural gas by other entities (e.g., commercial and industrial firms and non-Illinois electric generators). Even if Illinois, acting alone, could have a significant impact, it would be a hopelessly romantic gesture for the citizens of Illinois to take it upon themselves to preserve non-renewable resources for people living several generations from now, all over North America and the world. For instance, at current projections of reserves and consumption, if the current use of natural gas for electricity production in Illinois were completely eliminated, that would extend the availability of natural gas (decades from now) by somewhere in the vicinity of 1 to 25 days.

C. Recommendations for a Voluntary Standard and a Rate Impact Test

1. Rationale for a Voluntary Standard

Staff recommends that the Commission adopt a voluntary renewable portfolio standard. While several advocates of renewable energy would prefer a mandatory standard, Staff believes that there exists strong support among various stakeholders

for the establishment of a voluntary standard. In addition, there are legal concerns surrounding the Commission's authority to mandate a renewable portfolio standard. Irrespective of such legal issues, there should be valid policy reasons for the Commission to take an active role in encouraging renewable energy investment and usage. As noted in the previous section, there are both private and public benefits to renewable energy.

In the case of public benefits, the justification for intervention is clear. Electricity production using renewable energy sources as a substitute for many of the conventional energy sources may reduce various pollutants that are dangerous to the health of the environment and humans. It is a well-known principle of economics that when the costs from such "negative externalities" are not completely internalized by their producers, too much of them will be produced. The Public Utilities Act specifically mentions that the purpose of Commission regulation is to ensure "the provision of adequate, efficient, reliable, ***environmentally safe*** and least-cost public utility services."[8]

In the case of private benefits, the justification for government intervention is a bit different. As explained in the previous section, using long-term contracts for renewable resources as a hedge against cost increases from conventional electricity production is a potential private benefit of renewable energy. To justify government intervention into encouraging such hedges, though, depends not only on their feasibility, but also on some market flaw that prevents efficient levels of investment by private firms. That is, we are asking if there are any factors that are preventing firms, acting in their own best interest, to invest rationally in renewable energy production facilities. At least one possibility is worth considering: regulatory impediments.

2. Regulatory Impediments to Efficient Levels of Investment in Renewable Energy

While retail electric power markets are in transition toward "unbundled" utility service and greater reliance on market forces, there is still significant reliance (especially by smaller customers) on the traditional public utility company to secure their full electric power and energy requirements. Staff tends to believe that utilities, in designing their electricity purchasing strategies for these customers, prefer a path of least regulatory resistance. If utilities are under the impression that their investments in long-run contracts at currently above-market prices are going to be accepted by regulators as valid hedges against the possibility that market prices will rise, then they will be more willing to make such investments. However, utilities are likely to shy away from hedging possibilities made possible by long-run renewable contracts if they believe they are going to be second-guessed if market prices fail to rise.

Hence, with adequate assurances from the Commission, it is Staff's belief that voluntary participation in a renewable energy portfolio standard can succeed in

[8] 220 ILCS 5/1-102 (emphasis added)

generating active participation by electric utilities. This belief is substantiated by comments made in the workshop process by the largest utility companies in the State.[9]

3. Rationale for a Rate Impact Test

While the Commission should provide adequate assurances that long-run renewable energy purchases can be considered a valid and reasonable hedge to benefit consumers, it would be unwise for the Commission to grant *carte blanche* to any and all utility expenditures on renewable resources. Just as there are benefits, there are costs to such expenditures. A reasonable balance should be struck. For this reason, Staff proposes that the Commission's voluntary renewable energy portfolio standard limit eligibility to a portfolio of purchases that, in aggregate, is not expected to increase retail rates by more than a pre-determined percentage.

Furthermore, employing such a rate impact test is consistent with the Governor's proposed plan, where he states that:

> We concur with the Illinois Commerce Commission's recommendation as stated in its December 2, 2004 letter that "any RPS must consider the effect of the use of renewable resources on rates while also analyzing their net economic impact on utilities and ratepayers including health costs, electric distribution investment, etc." We recommend that the Commission take these factors into account when reviewing renewable power purchase agreements to ensure that such contracts are competitive with long-term electricity market price projections and have a stabilizing impact on long-term electric rates.

4. Making the Proposal Operational

To make Staff's voluntary RPS with rate impact test operational, Staff recommends setting forth a few simple guidelines, including:

- The target percentage of participating firms' electric energy demand that should be met with renewable resources;
- The maximum percentage rate increase that the Commission could accept to meet the targets; and
- A requirement for participating firms to provide annual or biannual reports showing current and planned levels of renewable resource use and comparing performance to the targets and rate impact test.

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[9] As for ARES, it is clear that the Illinois General Assembly envisioned ARES as a largely unregulated sector of the restructured Illinois electricity market. However, ARES are not subject to the same impediments that Staff believes could artificially hamper the regulated public utilities from efficiently utilizing renewable energy. If Illinois consumers want ARES to sell them electricity generated from renewable resources, then ARES will have to submit to the will of the consumers or lose business. If Illinois customers have no preference for renewable versus non-renewable power sources, then ARES will seek out the least cost mix of generation, without further prompting by regulators.

In Staff's view, the target percentage of each participant's electric energy demand that should be met with renewable resources can be taken from the Governor's proposed plan, with adjustment for the years prior to the first full year that the guidelines would be in effect. These goals were summarized in Section A.3, above, and are shown in more detail in Appendix B.

In Staff's view, the maximum percentage rate increase that the Commission could accept in order to meet the renewable energy targets should be capped at 0.5% in any one year (for new contracts) and 2% on a cumulatively basis (keeping in mind that renewable contracts may extend for 10 or more years). A breakdown of how 0.5% to 2% rate increases would be spread across ICC-regulated utilities is shown in Appendix C.

It is important to note that Staff is not proposing to eliminate the need for prudence or used and useful determinations of expenditures and investments by utility companies. However, utilities subject to rate regulation need a reasonable assurance that the concept of spending more on renewable resources than on conventional resources is not imprudent, on its face. Indeed, it is Staff's belief that the rate impact test should be applied to before-the-fact expected costs and expected increases in costs, rather than on after-the-fact costs and cost increases. After-the-fact review of expenditures should be limited to mismanagement or otherwise improper execution of the programs. This is how the Commission staff typically approaches prudence/imprudence questions in other contexts, such as purchased gas adjustment clause reconciliation proceedings.

D. Recommendations for Comparing Different Types of Renewable Resources

So far, this Staff report has talked in general terms about renewable energy resources, holding off any discussion of material differences between how such resources should be valued. However, it is undoubtedly true that some renewable resources are capable of producing power more reliably than others, during a greater percentage of peak hours than others, and with greater (or just different types of) reductions in negative externality costs. Staff believes that such differences should be recognized and that utilities and ARES should be encouraged to make purchases of renewable resources with at least some of these factors taken into consideration.

For instance, while one resource may cost $60 per MWH, another resource might cost only $50 per MWH. At first glance, it would appear that the second resource is less expensive. However, if the $60 resource is only used during the summer during peak hours, while the $50 resource is used throughout the year in both on-peak and off-peak hours, the $60 resource may lead to a smaller increase (or larger decrease) in total costs than the $50 resource. In this example, it is important to take into account the difference in electricity costs avoided by each of the two alternatives.

While such differences should be taken into account, Staff is reluctant to recommend specific methods for doing so. On the other hand, it is well within the Commission's purview to review whether the entities that it regulates are acting prudently in "the provision of adequate, efficient, reliable, environmentally safe and least-cost public utility services at prices which accurately reflect the long-term cost of such services and which are equitable to all citizens."[10] Hence, it is Staff's recommendation that participating utilities should explain how they are taking resource differences into account.

E. Recommendations for Ensuring Arms-Length Contracts for Renewable Resources

In Staff's view, the Governor's proposal for utilities and ARES to acquire renewable resources through "competitive procurement" processes is appropriate and should be adopted by the Commission. This is particularly critical if a utility would be accepting solicitations from its affiliates. Indeed, federal regulations disfavor any purchase of wholesale electricity from an affiliate that has not been entered into pursuant to an acceptable competitive procurement process.

Thus, Staff proposes that all purchases of renewable energy be secured through either auctions or requests for proposals that are managed by independent third parties. Whether an auction or a request for proposal is used in any instance is expected to depend on the size of the procurement. In either event, though, the process should be as transparent as possible, without unduly jeopardizing its competitiveness.

F. Recommendations for Renewable Energy Credit Trading

Renewable energy credits ("RECs") are verifiable certificates indicating the way in which and degree to which energy has been produced using renewable energy sources. Trading in RECs can help firms subject to a renewable energy standard comply with the standard at a lower total cost. For instance, they would enable a southern Illinois utility that is not quite meeting the standard to contract with a northern Illinois utility that is over-complying with the standard to obtain some of the northern Illinois utility's RECs.

Staff believes that, with a voluntary system, there is a limited need for REC trading. Thus, at this early stage, Staff recommends against the Commission taking any active role in developing a system of REC trading. However, if a REC trading system is put in place by the Regional Transmission Organizations ("RTOs") that serve Illinois (namely, PJM and Midwest ISO), or by some federal authority, then such an off-the-shelf REC trading system could be used by participants to help minimize their cost of meeting Illinois' renewable energy standards.

[10] 220 ILCS 5/1-102

With a trading system, the Commission will have to determine whether to limit trading to facilities within Illinois (and surrounding non-attainment areas) or to a broader geographic area (e.g., all of PJM, all of the Eastern Interconnect, or all of North America). As previously noted, the Governor's proposal suggests that eligible renewable resources should be limited to those within Illinois and surrounding non-attainment areas. This is a rational policy for Illinois if the benefits from using renewable resources within Illinois are largely captured within Illinois (and, correspondingly, if the benefits from using renewable resources outside Illinois are largely captured outside Illinois). While Staff lacks the expertise to provide a definitive answer, it is certainly possible that some of the benefits of renewable resource use are local, while other benefits are spread over larger areas. For instance, Staff understands that NOX emissions have local effects on urban smog, while SO2 emissions have long-range, down-wind effects on acid rain production, and CO2 emissions have global effects on global warming. Thus, it may be reasonable for the State to allow participating firms in Illinois to use RECs produced outside as well as inside the State to attain compliance with the renewable standard. If Illinois jobs, tax revenues, and land lease payments are to be considered the primary benefit components, then there may be a greater reason to limit eligible RECs to those produced from in-state renewable resources.

Demand Response and Energy Efficiency

A. Eligible Demand Response and Energy Efficiency Resources

1. Definitions and Examples

In the context of electricity markets, "demand response" refers to the ability to control the level of electricity demand at any point in time (or relatively small interval of time, such as 5 minutes to 1 hour), while energy efficiency refers to the ability to control consumption of electric energy over extended time periods. Demand response resources permit consumers or utilities to quickly cut back electricity demand for short periods and might be engaged when the marginal cost of electricity is particularly high. Some of those resources could actually increase total electricity consumption over a longer time period, but the savings from the short-run cut-back would be more valuable than the cost increases over the longer-run period. In contrast, energy efficiency resources may generate overall reductions in energy consumption, but are less targeted to particular time periods. There is not necessarily a bright line separating energy efficiency and demand response resources but, generally, energy efficiency resources are less "dispatchable" than demand response resources. There is a large array of demand response and energy efficiency resources.

An example of a demand response resource, in terms of hardware, would be a system that enables the utility to remotely turn off a large collection of air-conditioning units whenever desired. Another example, in terms of financial contracts, would enable an RTO, such as PJM, to contract with a "load-serving entity" to reduce an upcoming hour's load nomination on a moment's notice.

An example of an energy efficiency resource would be thermal insulation. However, in many cases, investments in energy efficiency are expenditures to retrofit or replace lower-efficiency systems with higher-efficiency systems (for instance, replacing a lower-efficiency air-conditioning unit with a higher-efficiency air-conditioning unit; replacing lower-efficiency lights with higher-efficiency lights; or improving the controls on a cooling or lighting system). Sometimes, such replacements can affect not only the amount of energy consumed, but may have other effects on the value derived from the system in question.

2. Recommendations on Determining Eligible Resources

For purposes of adopting a demand response and energy efficiency plan, the Commission needs to determine how the involvement of utilities and ARES can best contribute to greater investment in demand response and energy efficiency. Rather than select a given array of resources, Staff recommends that the Commission allow participating utilities and ARES to develop their own programs to meet the goals. The criteria for including a given marginal expenditure in the program should be

whether the expenditure is expected to produce demand response savings or energy cost savings that exceed the expenditures.

3. Proposed Goals

The Governor's proposed goals for demand response and energy efficiency are to reduce projected load growth, initially by 10%, and eventually by 25% per year, according to the timetable shown below:

Years 2006 to 2008:	10% of Projected Annual Load Growth
Years 2009 to 2011:	15% of Projected Annual Load Growth
Years 2012 to 2014:	20% of Projected Annual Load Growth
Years 2015 to 2017:	25% of Projected Annual Load Growth

To translate these percentages into energy units, such as Gigawatt Hours (GWH), we need to have projections of annual load growth. According to the EIA, current projections are for electricity demand to increase on average by 1.9% per year though 2025.[11] Applying this percentage to Illinois utilities' 2003 bundled plus delivery services sales[12] amounts to approximately 2,400 GWH of electric energy load growth. Thus, a 10% reduction in such growth would amount to approximately 240 GWH of energy savings per year. A more detailed description of how the Governor's proposal translates into energy units is shown in Appendix D, attached.

Staff recommends that the Governor's goals be slightly altered to recognize and accommodate two key components of the Illinois Electric Service Customer Choice and Rate Relief Law of 1997: the rate freeze and the Illinois utilities' related full-requirements contracts with electricity suppliers that do not expire until 2007. Given these provisions, there is little need for power alternatives (such as demand response and energy efficiency programs) and no means to obtain cost recovery for such alternatives until 2007. Hence, Staff proposes that the goals begin in 2007, as shown below:

Years 2007 to 2008:	10% of Projected Annual Load Growth
Years 2009 to 2011:	15% of Projected Annual Load Growth
Years 2012 to 2014:	20% of Projected Annual Load Growth
Years 2015 to 2017:	25% of Projected Annual Load Growth

A more detailed description of how the Staff's proposal translates into energy units is shown in Appendix D, attached.

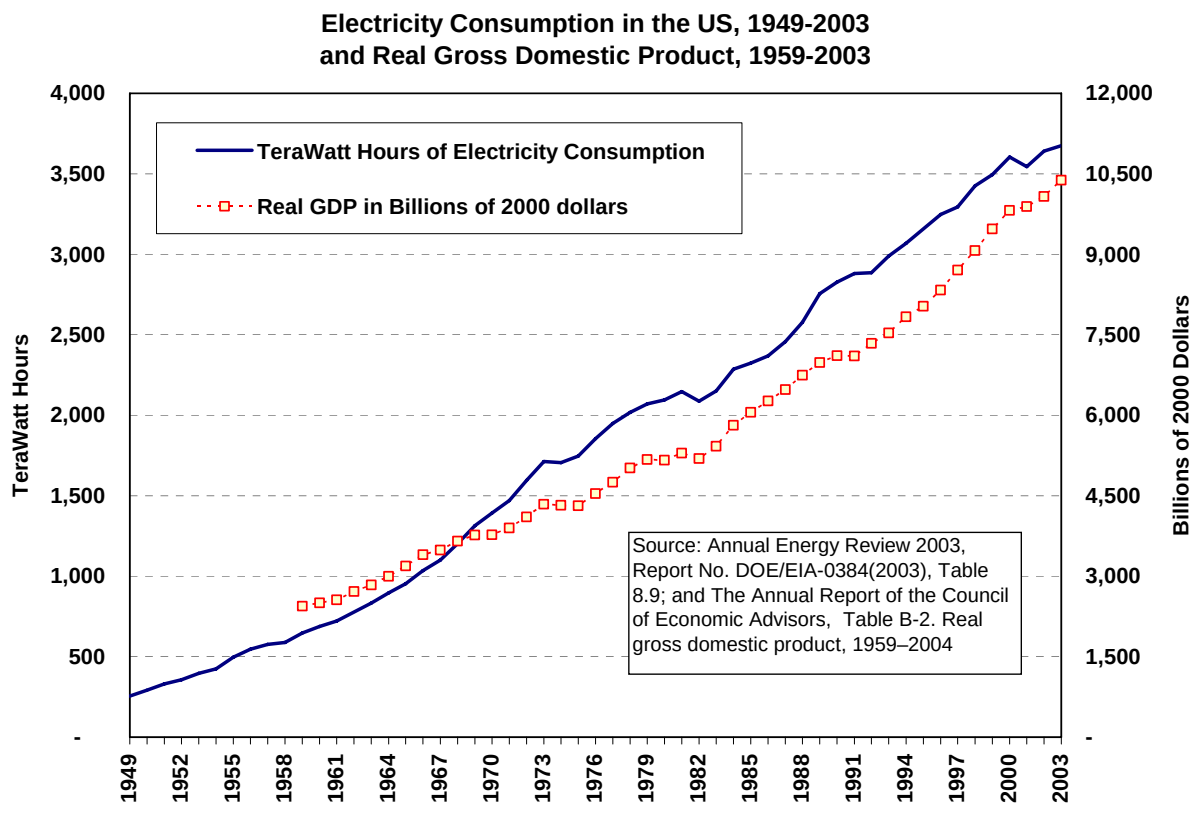
[11] The figure of 1.9% is based on the EIA's Annual Energy Outlook 2005 (see http://www.eia.doe.gov/oiaf/aeo/electricity.html). It is presented here for illustrative purposes, and does not constitute an official forecast relevant to any or all Illinois electric utilities.
[12] 124,431 GWH (See Appendix D)

4. Existing Demand Response and Energy Efficiency Resources

a) Efficiency trends

Given the definitions above, demand response and energy efficiency investments (particularly the latter) are ubiquitous in Illinois and the U.S. Every time that a consumer replaces his or her dish-washer, clothes dryer, or air conditioner, chances are very good that they are being replaced with much higher efficiency units. When a new home is built, chances are that it has more insulation and more air-tight windows and doors than exist in much older housing stock. When a commercial building is designed, the client is not indifferent to how its design will affect energy consumption; close attention will be paid to the trade-off between investments to reduce energy consumption and the expected cost of energy consumption. Furthermore, there are relatively few individual consumers or businesses operating their home appliances or business equipment with reckless abandon and indifference to how much they are spending on electricity. In a sense, everybody is a conservationist.

Despite improvements in energy efficiency, U.S. electricity use in total has increased in all but three years since 1949. In general, the increase in electricity consumption mirrors the increase in gross domestic product. (See graph, below). For instance, increasing wealth and living standards has led to corresponding increase in the use of such electricity-intensive appliances as air conditioners, clothes dryers, and personal computers.



b) RTO Load Response Programs

The two major RTOs serving Illinois (PJM and the Midwest ISO) have in place load response programs. For instance, since Commonwealth Edison Company ("ComEd") is within PJM, ComEd's end-use customers may join with a PJM-qualified Load Serving Entity ("LSE") or Curtailment Service Provider ("CSP") to participate in one of PJM's load response programs. Currently, PJM has two load response programs: the Economic Load Response Program and the Emergency Load Response Program (For more details on these programs, see Appendix E.).

Since Ameren is within the Midwest ISO ("MISO"), Ameren's customers would be subject to the program described in MISO's FERC Electric Tariff, which defines a Demand Response Resource Offer (DRR Offer) as "An Offer submitted by a Market Participant to supply Energy to the Energy Markets based on the reductions of withdrawals of a specified Demand Response Resource."[13] The MISO tariff goes on to state:

> A Market Participant Applicant seeking to submit Demand Response Resource Offers in the Energy Markets shall: (i) demonstrate to the satisfaction of the Transmission Provider that it has exclusive rights through ownership, operational control or other contractual rights to the output of Demand Response Resources capable of responding to the Dispatch Instructions; (ii) designate those Resources as Demand Response Resources with the Transmission Provider; and (iii) demonstrate to the satisfaction of the Transmission Provider that it complies with all metering, telemetry, data storage and communication protocols, and other reliability, operation, planning and accounting standards and requirements for operating in the Transmission Provider Region necessary to allow the Transmission Provider to validate the ability of the Demand Response Resource to respond to the Dispatch Instructions provided by the Transmission Provider. [14]

c) Demand Response and Energy Efficiency Programs Sponsored by Illinois Electric Utilities

As demonstrated in the previous two sub-sections, it would be quite meaningless to measure total investment in demand response and energy efficiency resources as just the investments that are being made by utilities and ARES. However, the following is a list of some of the programs that are being managed by two of the major utilities in the State:

(1) Commonwealth Edison Company

For its residential customers, in addition to providing efficiency information, energy audits, and sales of some high-efficiency appliances, ComEd offers a

[13] Midwest ISO, FERC Electric Tariff, Third Revised Volume No. 1, Second Revised Sheet No. 65.
[14] Midwest ISO, FERC Electric Tariff, Third Revised Volume No. 1, Second Revised Sheet Nos. 373-374.

program called "Nature First" in which customers agree to allow ComEd to remotely cycle their central air conditioners (as needed on weekdays during the summer months). The "50% option" cycles units off for a maximum of 15 minutes every half hour (if needed), and provides customers with a $5 credit/month per household for a total credit of $20. The "100% option" cycles units off for one continuous 3-hour period during any weekday (if needed), and provides customers with a $10 credit/month per household for a total credit of $40.

For its business customers, in addition to offering energy use data and energy efficiency consulting services, ComEd has a load response program called "Smart Returns" that pays financial incentives for reducing electricity usage during times of high wholesale electricity prices when requested by ComEd. This program includes:

- Voluntary Load Reduction – According to ComEd, this is its most popular Smart Returns program, where customers decide when and how much to reduce energy usage.
- Early Advantage – According to ComEd, this is for large users of electricity (peak demand > 1MW), and allows customers to customize the incentives, notification terms and event duration.
- Rider 26 Interruptible Service – According to ComEd, this program allows businesses to realize substantial year-round savings on their monthly electricity bills in exchange for automatic shut-off of their electrical equipment on short notice. However, this Rider is closed to new enrollment.
- Rider 27 Displacement of Self Generation – According to ComEd, this program allows businesses with on-site generation capabilities to benefit from lower electric rates year-round by agreeing to utilize their generators when requested by ComEd. However, this Rider is closed to new enrollment.
- Rider 30 The Alliance – According to ComEd, this program allows organizations to choose the level of financial benefits, amount of advance notification, and frequency and length of events needed to earn monthly bill credits.
- Rider 32 Energy Cooperative – According to ComEd, this program provides "enhances financial incentives" to any Rate 6L customer who can reduce a significant amount of electric load and can commit to a five-year agreement.

Additional details provided by ComEd on the company's demand response and energy efficiency programs can be found in Appendix F of this report.

(2) Ameren

The Ameren utilities offer energy conservation information through printed brochures and via the Ameren.com website for residential and business customers. The Ameren utilities also offer programs to business customers in Illinois such as:

Motor Miser Program:

> According to Ameren, its Motor Miser program helps customers evaluate the efficiency of existing electric motors, make effective decisions on motor replacement or repair and improve motor reliability. The centerpiece of Motor Miser is the MotorMaster Plus energy-efficient motor selection software. Ameren provides this software free—along with help in getting it up and running. Ameren also helps customers use the software as a daily motor management tool.

Energy Efficiency Workshops:

> Ameren conducts four 4 workshops per year with approximately 50 Customers per event. The workshops are conducted and supported by the Ameren utilities directly and through partnerships with the Illinois Department of Commerce and Economic Opportunity (DCEO), the Illinois Manufacturing Extension Center (IMEC), the Association of Professional Energy Consultants (APEC), and the International Facility Management Association (IFMA), or other energy efficiency vendors. This educational atmosphere allows customer to identify potential areas for energy efficiency improvement with programs and services that are available to them.

Finally, as for demand response programs, the Ameren companies have interruptible/curtailment programs with the following subscriptions:

AmerenIP	71 MW
AmerenCIPS	150 MW
AmerenCILCO	14 MW
Ameren IL total	235 MW

Source: Ameren

B. Benefits of Demand Response and Energy Efficiency

The benefits of demand response and energy efficiency, like those of renewable resources, generally fall into two categories: private and public benefits.

As far as private benefits are concerned, lower energy consumption, especially during high-cost periods of the year, week, or day, translates directly into lower electricity bills. Thus, the primary beneficiary of demand response and energy efficiency investment is the consumer whose energy demand and energy consumption has been reduced. When rate design does not perfectly align marginal costs with marginal prices, it is possible for <u>other</u> consumers to benefit as well (even if their demand and energy consumption was unaffected).

Similar to using renewable resources as “hedges,” there can also be a hedging benefit associated with demand response and energy conservation. That is, even where current electricity prices do not seem to justify a particular demand

response or energy efficiency investment, price volatility and the risk that prices may increase over time may be enough to justify such an investment as a price hedge. (See the previous discussion of hedging in the renewable energy section of this report).

The public benefits associated with demand response and energy efficiency investments (particularly the latter) are basically the same as those identified in the renewable energy section of this report. Reductions in electricity demand reduce the need to produce electricity, which reduces emissions of potentially harmful substances, like SO2 and NOX, which are negative externalities. The benefits of such reductions are shared by all entities that would otherwise be subject to such emissions. (See the previous discussion of externalities in the renewable energy section of this report).

Finally, reductions in load can also reduce congestion on the electric grid, thereby lowering marginal generation costs and perhaps even enhancing wholesale competition and system reliability.

C. Recommendations for a Voluntary Standard and a Rate Impact Test

1. Rationale for a Voluntary Standard

Staff recommends that the Commission adopt a voluntary demand response and energy efficiency standard. While several advocates of load response and energy efficiency programs would prefer a mandatory standard, Staff believes that there exists strong support among various stakeholders for the establishment of a voluntary standard. In addition, there are legal concerns surrounding the Commission's authority to mandate a demand response and energy efficiency standard. Irrespective of such legal issues, there should be valid policy reasons for the Commission to take an active role in encouraging demand response and energy efficiency investment. As noted in the previous section, there are both private and public benefits to such investment.

In the case of public benefits, the justification for intervention is clear. Reductions in electricity production reduce various pollutants that are dangerous to the health of the environment and humans. It is a well-known principle of economics that when the costs from such "negative externalities" are not completely internalized by their producers, too much of them will be produced. The Public Utilities Act specifically mentions that the purpose of Commission regulation is to ensure "the provision of adequate, efficient, reliable, ***environmentally safe*** and least-cost public utility services."[15]

In the case of private benefits, the justification for government intervention is a bit different. As explained in the previous section, demand response and energy efficiency investments can lower electric bills and act as a price hedge, at least for

[15] 220 ILCS 5/1-102 (emphasis added)

some consumers. To justify government intervention, though, depends not only on their feasibility, but also on some market flaw that prevents efficient levels of investment by private individuals and firms. That is, we are asking if there are any factors that are preventing individuals and firms, acting in their own best interest, to invest rationally and economically in demand response and energy efficiency. At least two possibilities are worth considering: rate design compromises and regulatory impediments.

2. Rate Design Compromises as a Barrier to Efficient Investment in Load Response and Energy Efficiency

Rate design is a multi-step process that involves the balancing of many competing goals. Hence, it should be no surprise that the resulting rates for electric utility service do not perfectly encourage economically efficient levels of electricity consumption and, by implication, economically efficient levels of investment in load response and energy efficiency.

For example, one goal of rate design is rate stability. Hence, while the actual marginal cost of generating electricity may vary significantly over the course of a day, week, and year, the marginal prices seen by consumers may be allowed to vary much less, if at all. On average, over time, we might hope that the revenues approximately equal the costs (one of the goals of regulation). However, over shorter time frames there can be significant variance between prices and costs, leading to inefficient levels of consumption, even when consumers are acting perfectly rationally.

Also, traditionally, while the cost of building new generating facilities may have been increasing, rates were designed, not to cover the cost of new generating facilities, but to cover the cost of existing generating facilities. Hence, growth in peak-hour consumption may have been higher than it would have been if consumers had been faced with prices tied more closely to the marginal cost of building new facilities.

It is hard to argue that such rate design features were flaws. It is much easier to characterize such rate design features as compromises between a long list of valid regulatory policy goals, and as attempts to balance the competing interests of different stakeholders.

As part of the restructuring the electric industry, consumers are being given more “real-time pricing” options. This may lower some of the barriers to efficient investment in load response and energy efficiency. However, such trends are not likely to eliminate all of these barriers, leaving some room for government

intervention into encouraging changes in the level of investment in load response and energy efficiency.[16]

3. Regulatory Impediments to Efficient Investment in Load Response and Energy Efficiency

Up until 1997, utilities in Illinois were required by Section 8-402 of the Act[17] to present to the Commission plans showing how they would meet the energy needs of their customers in the least-cost manner, and to include in those plans an analysis of load response and energy efficiency. In addition, utilities were required to develop load response and energy efficiency programs under Section 8-404 of the Act.[18] Both of these sections were repealed by the General Assembly as a part of the electric restructuring legislation passed at the end of 1997.

Without some form of pressure (as may have existed with repealed Sections 8-402 and 8-404), one might believe that electric utilities have little incentive to encourage energy conservation. After all, higher electricity sales imply higher revenues. However, this simple argument goes only so far, and a proper analysis of the utility's incentives must examine how the utility's costs (as well as revenues) and any of its affiliate's costs (and revenues) vary with changes in consumption. This report does not attempt to perform any such complex analysis.

4. Rationale for a Rate Impact Test

In order to encourage more investment in demand response and energy efficiency, the Commission should provide adequate assurances that such investment can be considered beneficial, as well as recoverable in utility rates. However, just as there are benefits, there are costs to such expenditures. Furthermore, unlike the benefits of renewable resource investments by utilities, the benefits of demand response and energy efficiency investments by utilities are likely to be less evenly shared among ratepayers. For example, a utility program that provides rebates worth 20% of the cost of high efficiency air conditioners is more likely to benefit those customers that actually buy new high efficiency air conditioners (and hence can afford to be buying new high efficiency air conditioners in the first place). The energy savings associated with such an investment will reduce those customers' electric bill and may have negligible effects on the bills of other customers. Indeed, other customers may end up paying more rather than less.

Hence, a reasonable balance should be struck. For this reason, Staff proposes that the Commission's voluntary demand response and energy efficiency standard limit eligibility to a portfolio of investments that, in aggregate, is not expected to increase retail rates by more than a pre-determined percentage.

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[16] While customers in Illinois are currently given the option to have "real-time" prices (where prices better reflect the time-sensitivity of costs) almost all customers have continued to prefer relatively fixed prices.
[17] Repealed by P.A. 90-561, effective December 16, 1997.
[18] Repealed by P.A. 90-561, effective December 16, 1997

Furthermore, employing such a rate impact test is consistent with the Governor's proposed plan, where he states that:

> Similar to the treatment of renewable resources, we recommend that the Commission review contracts with Energy Efficiency Service Providers to ensure that such contracts are competitive with long-term electricity market price projections and have a stabilizing impact on long-term electric rates. We recommend that the costs of complying with these energy efficiency and demand reduction requirements be fully recoverable in rates if they are shown to be competitive with traditional forms of generation and delivery resources. Contracts for energy efficiency and demand response should be based on reasonable costs that reflect a full accounting of overall long-term benefits of such resources (i.e. consumer benefits of long-term fixed price contracts, environmental, economic and electricity system benefits). Contracts could be in the form of up-front capital investment or ongoing energy/demand payments.

5. Making the Proposal Operational

To make Staff's voluntary demand response and energy efficiency standard and rate impact test operational, Staff recommends setting forth a few simple guidelines, including:

- The target percentage of participating firms' projected load growth that should be reduced each year through the firm's demand response and energy efficiency programs;

- The maximum percentage rate increase that the Commission could accept in order to obtain such load reduction targets; and

- A requirement for participating firms to provide annual or biannual reports showing current and planned levels of demand response and energy efficiency programs and comparing performance to the targets and rate impact test.

In Staff's view, the target percentage of each participant's projected load growth that should be reduced each year through demand response and energy efficiency programs can be taken from the Governor's proposed plan, with adjustment for the years prior to the first full year that the guidelines would be in effect. These goals were summarized in Section A.3, above, and are provided in more detail in Appendix D.

In Staff's view, the maximum percentage rate increase per year that the Commission could accept in order to obtain such load reductions should be computed separately for each rate class for which demand response and energy efficiency programs are available. Furthermore, the computation of the percentage increase should be based on the total annual bill for a typical customer within the

class, and should be capped at 0.5%. A breakdown of how 0.5% to 2% rate increases would be spread across ICC-regulated utilities is shown in Appendix C.

It is important to note that Staff is not proposing to eliminate the need for prudence or used and useful determinations of expenditures and investments. However, utilities subject to rate regulation need a reasonable assurance that spending on load response and energy efficiency programs is not imprudent, on its face. Indeed, it is Staff's belief that the rate impact test should be applied to before-the-fact expected costs and expected increases in costs, rather than on after-the-fact costs and cost increases. After-the-fact review of expenditures should be limited to mismanagement or otherwise improper execution of the programs. This is how the Commission staff typically approaches prudence/imprudence questions in other contexts, such as purchased gas adjustment clause reconciliation proceedings.

D. Recommendations for Comparing Different Types of Demand Response and Efficiency Programs

So far, this Staff report has talked in general terms about demand response and energy efficiency resources, holding off any discussion of material differences between how such resources should be valued. However, it is undoubtedly true that some resources are capable of reducing demand more reliably than others or during a greater percentage of peak hours than others. Staff believes that such differences should be recognized and that utilities and ARES should be encouraged to pursue demand response and energy efficiency investments with such factors taken into consideration.

While such differences should be taken into account, Staff is reluctant to recommend specific methods for doing so. On the other hand, it is well within the Commission's purview to review whether the entities that it regulates are acting prudently in "the provision of adequate, efficient, reliable, environmentally safe and least-cost public utility services at prices which accurately reflect the long-term cost of such services and which are equitable to all citizens."[19] Hence, it is Staff's recommendation that participating utilities should explain how they are taking resource differences into account.

E. Recommendations for Ensuring Arms-Length Contracts for Demand Response and Efficiency Programs

In Staff's view, the Governor's proposal for utilities and ARES to acquire load response and energy efficiency services through competitive procurement processes is appropriate and should be adopted by the Commission. This is particularly critical if a utility would be accepting solicitations from its affiliates. Thus, similar to the recommendation for acquiring renewable energy resources, Staff proposes that all purchases of load response and energy efficiency services be secured through either auctions or requests for proposals that are managed by independent third parties.

[19] 220 ILCS 5/1-102

Whether an auction or a request for proposal is used in any instance is expected to depend on the size of the procurement. In either event, though, the process should be as transparent as possible, without unduly jeopardizing its competitiveness.

Next Steps

Staff recommends that the Commission adopt a resolution accepting this report and authorizing its distribution.

Appendix A: Governor's Letter and Proposed Plan

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Portfolio Standard\05

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Portfolio Standard\05

Appendix B: Renewable Energy Goals

The tables on the next six pages present both the Governor's and the Staff's proposed renewable energy resource goals, and expresses those goals in terms of Megawatt Hours (rather than percentages). To convert percentages to Megawatt Hours, all tables are based on 2003 sales to ultimate customers, as reported in "Illinois Electric Utilities, Comparison of Electric Sales Statistics For Calendar Years 2003 and 2002," revised May 25, 2005. The first two tables are based on as assumed growth rate of 0%. The last four tables are based on an assumed growth rate of 1.9% less assumed reductions in demand growth due to the energy efficiency goals discussed in this report (and shown in Appendix D). The 1.9% growth rate was taken from a recent EIA forecast for the electric industry in the U.S. Please note that these figures are for illustration purposes and do not represent Staff's forecast of energy demand in future years for any Illinois electric utility.

Proposed MWH of Total Renewable Energy Production to be Acquired
(based on Sales to Ultimate Customers in 2003 and no load growth)

	Governor's Proposed Goals	2006	2007	2008	2009	2010	2011	2012
	Staff Proposed Goals	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Company	**2003 Bundled Sales**	**2%**	**3%**	**4%**	**5%**	**6%**	**7%**	**8%**
ComEd	58,792,984	1,175,860	1,763,790	2,351,719	2,939,649	3,527,579	4,115,509	4,703,439
AmerenIP	13,016,543	260,331	390,496	520,662	650,827	780,993	911,158	1,041,323
AmerenCIPS	7,169,877	143,398	215,096	286,795	358,494	430,193	501,891	573,590
AmerenCILCO	5,906,979	118,140	177,209	236,279	295,349	354,419	413,489	472,558
AmerenUE	3,213,081	64,262	96,392	128,523	160,654	192,785	224,916	257,046
MidAmerican	1,807,963	36,159	54,239	72,319	90,398	108,478	126,557	144,637
Interstate Power	346,231	6,925	10,387	13,849	17,312	20,774	24,236	27,698
South Beloit	203,592	4,072	6,108	8,144	10,180	12,216	14,251	16,287
Mt. Carmel	144,762	2,895	4,343	5,790	7,238	8,686	10,133	11,581
Total	90,602,012	1,812,040	2,718,060	3,624,080	4,530,101	5,436,121	6,342,141	7,248,161
Company	**Bundled + DS-PPO**	**2%**	**3%**	**4%**	**5%**	**6%**	**7%**	**8%**
ComEd	67,934,518	1,358,690	2,038,036	2,717,381	3,396,726	4,076,071	4,755,416	5,434,761
AmerenIP	16,204,931	324,099	486,148	648,197	810,247	972,296	1,134,345	1,296,394
AmerenCIPS	7,506,390	150,128	225,192	300,256	375,320	450,383	525,447	600,511
AmerenCILCO	5,906,979	118,140	177,209	236,279	295,349	354,419	413,489	472,558
AmerenUE	3,213,081	64,262	96,392	128,523	160,654	192,785	224,916	257,046
MidAmerican	1,807,963	36,159	54,239	72,319	90,398	108,478	126,557	144,637
Interstate Power	346,231	6,925	10,387	13,849	17,312	20,774	24,236	27,698
South Beloit	203,592	4,072	6,108	8,144	10,180	12,216	14,251	16,287
Mt. Carmel	144,762	2,895	4,343	5,790	7,238	8,686	10,133	11,581
Total	103,268,447	2,065,369	3,098,053	4,130,738	5,163,422	6,196,107	7,228,791	8,261,476
Company	**Bundled + DS-All**	**2%**	**3%**	**4%**	**5%**	**6%**	**7%**	**8%**
AmerenUE	85,700,744	1,714,015	2,571,022	3,428,030	4,285,037	5,142,045	5,999,052	6,856,060
AmerenCIPS	18,599,486	371,990	557,985	743,979	929,974	1,115,969	1,301,964	1,487,959
AmerenIP	8,508,626	170,173	255,259	340,345	425,431	510,518	595,604	680,690
AmerenCILCO	5,906,979	118,140	177,209	236,279	295,349	354,419	413,489	472,558
AmerenCILCO	3,213,081	64,262	96,392	128,523	160,654	192,785	224,916	257,046
Interstate Power	1,807,963	36,159	54,239	72,319	90,398	108,478	126,557	144,637
MidAmerican	346,231	6,925	10,387	13,849	17,312	20,774	24,236	27,698
Mt. Carmel	203,592	4,072	6,108	8,144	10,180	12,216	14,251	16,287
South Beloit	144,762	2,895	4,343	5,790	7,238	8,686	10,133	11,581
Total	124,431,464	2,488,629	3,732,944	4,977,259	6,221,573	7,465,888	8,710,202	9,954,517

Minimum Amount of Wind-Powered MWH

(based on Sales to Ultimate Customers in 2003 and no load growth)

	Governor's Proposed Goals	2006	2007	2008	2009	2010	2011	2012
	Staff's Proposed Goals	2007	2008	2009	2010	2011	2012	2013
	Governor's Proposed Wind Min	75%	75%	75%	75%	75%	75%	75%
	x	2%	3%	4%	5%	6%	7%	8%
	=	1.50%	2.25%	3.00%	3.75%	4.50%	5.25%	6.00%
Company	**2003 Bundled Sales**							
ComEd	58,792,984	881,895	1,322,842	1,763,790	2,204,737	2,645,684	3,086,632	3,527,579
AmerenIP	13,016,543	195,248	292,872	390,496	488,120	585,744	683,369	780,993
AmerenCIPS	7,169,877	107,548	161,322	215,096	268,870	322,644	376,419	430,193
AmerenCILCO	5,906,979	88,605	132,907	177,209	221,512	265,814	310,116	354,419
AmerenUE	3,213,081	48,196	72,294	96,392	120,491	144,589	168,687	192,785
MidAmerican	1,807,963	27,119	40,679	54,239	67,799	81,358	94,918	108,478
Interstate Power	346,231	5,193	7,790	10,387	12,984	15,580	18,177	20,774
South Beloit	203,592	3,054	4,581	6,108	7,635	9,162	10,689	12,216
Mt. Carmel	144,762	2,171	3,257	4,343	5,429	6,514	7,600	8,686
Total	90,602,012	1,359,030	2,038,545	2,718,060	3,397,575	4,077,091	4,756,606	5,436,121
Company	**Bundled + DS-PPO**							
ComEd	67,934,518	1,019,018	1,528,527	2,038,036	2,547,544	3,057,053	3,566,562	4,076,071
AmerenIP	16,204,931	243,074	364,611	486,148	607,685	729,222	850,759	972,296
AmerenCIPS	7,506,390	112,596	168,894	225,192	281,490	337,788	394,085	450,383
AmerenCILCO	5,906,979	88,605	132,907	177,209	221,512	265,814	310,116	354,419
AmerenUE	3,213,081	48,196	72,294	96,392	120,491	144,589	168,687	192,785
MidAmerican	1,807,963	27,119	40,679	54,239	67,799	81,358	94,918	108,478
Interstate Power	346,231	5,193	7,790	10,387	12,984	15,580	18,177	20,774
South Beloit	203,592	3,054	4,581	6,108	7,635	9,162	10,689	12,216
Mt. Carmel	144,762	2,171	3,257	4,343	5,429	6,514	7,600	8,686
Total	103,268,447	1,549,027	2,323,540	3,098,053	3,872,567	4,647,080	5,421,593	6,196,107
Company	**Bundled + DS-All**							
AmerenUE	85,700,744	1,285,511	1,928,267	2,571,022	3,213,778	3,856,533	4,499,289	5,142,045
AmerenCIPS	18,599,486	278,992	418,488	557,985	697,481	836,977	976,473	1,115,969
AmerenIP	8,508,626	127,629	191,444	255,259	319,073	382,888	446,703	510,518
AmerenCILCO	5,906,979	88,605	132,907	177,209	221,512	265,814	310,116	354,419
AmerenCILCO	3,213,081	48,196	72,294	96,392	120,491	144,589	168,687	192,785
Interstate Power	1,807,963	27,119	40,679	54,239	67,799	81,358	94,918	108,478
MidAmerican	346,231	5,193	7,790	10,387	12,984	15,580	18,177	20,774
Mt. Carmel	203,592	3,054	4,581	6,108	7,635	9,162	10,689	12,216
South Beloit	144,762	2,171	3,257	4,343	5,429	6,514	7,600	8,686
Total	124,431,464	1,866,472	2,799,708	3,732,944	4,666,180	5,599,416	6,532,652	7,465,888

Governor's Proposed MWH of Total Renewable Energy Production to be Acquired

(based on Sales to Ultimate Customers in 2003, a 1.9% Growth Rate less Governor's proposed energy growth reductions)

		2006	2007	2008	2009	2010	2011	2012
Company	**2003 Bundled Sales**	**2%**	**3%**	**4%**	**5%**	**6%**	**7%**	**8%**
ComEd	58,792,984	1,241,845	1,898,161	2,578,968	3,281,892	4,013,097	4,770,904	5,550,864
AmerenIP	13,016,543	274,940	420,246	570,974	726,598	888,484	1,056,260	1,228,940
AmerenCIPS	7,169,877	151,445	231,483	314,508	400,231	489,402	581,818	676,935
AmerenCILCO	5,906,979	124,769	190,710	259,111	329,734	403,199	479,337	557,700
AmerenUE	3,213,081	67,868	103,736	140,943	179,358	219,319	260,733	303,359
MidAmerican	1,807,963	38,188	58,371	79,307	100,923	123,408	146,712	170,696
Interstate Power	346,231	7,313	11,178	15,188	19,327	23,633	28,096	32,689
South Beloit	203,592	4,300	6,573	8,931	11,365	13,897	16,521	19,222
Mt. Carmel	144,762	3,058	4,674	6,350	8,081	9,881	11,747	13,668
Total	90,602,012	1,913,726	2,925,131	3,974,278	5,057,508	6,184,321	7,352,127	8,554,072
Company	**Bundled + DS-PPO**	**2%**	**3%**	**4%**	**5%**	**6%**	**7%**	**8%**
ComEd	67,934,518	1,434,936	2,193,300	2,979,963	3,792,183	4,637,081	5,512,716	6,413,950
AmerenIP	16,204,931	342,286	523,184	710,833	904,578	1,106,118	1,314,990	1,529,968
AmerenCIPS	7,506,390	158,553	242,348	329,270	419,015	512,372	609,125	708,706
AmerenCILCO	5,906,979	124,769	190,710	259,111	329,734	403,199	479,337	557,700
AmerenUE	3,213,081	67,868	103,736	140,943	179,358	219,319	260,733	303,359
MidAmerican	1,807,963	38,188	58,371	79,307	100,923	123,408	146,712	170,696
Interstate Power	346,231	7,313	11,178	15,188	19,327	23,633	28,096	32,689
South Beloit	203,592	4,300	6,573	8,931	11,365	13,897	16,521	19,222
Mt. Carmel	144,762	3,058	4,674	6,350	8,081	9,881	11,747	13,668
Total	103,268,447	2,181,271	3,334,073	4,529,894	5,764,563	7,048,908	8,379,976	9,749,957
Company	**Bundled + DS-All**	**2%**	**3%**	**4%**	**5%**	**6%**	**7%**	**8%**
AmerenUE	85,700,744	1,810,200	2,766,891	3,759,283	4,783,914	5,849,770	6,954,401	8,091,325
AmerenCIPS	18,599,486	392,865	600,494	815,871	1,038,245	1,269,566	1,509,302	1,756,046
AmerenIP	8,508,626	179,722	274,705	373,233	474,961	580,783	690,454	803,331
AmerenCILCO	5,906,979	124,769	190,710	259,111	329,734	403,199	479,337	557,700
AmerenCILCO	3,213,081	67,868	103,736	140,943	179,358	219,319	260,733	303,359
Interstate Power	1,807,963	38,188	58,371	79,307	100,923	123,408	146,712	170,696
MidAmerican	346,231	7,313	11,178	15,188	19,327	23,633	28,096	32,689
Mt. Carmel	203,592	4,300	6,573	8,931	11,365	13,897	16,521	19,222
South Beloit	144,762	3,058	4,674	6,350	8,081	9,881	11,747	13,668
Total	124,431,464	2,628,284	4,017,332	5,458,214	6,945,907	8,493,455	10,097,302	11,748,036

Governor's Proposed Minimum Amount of Wind-Powered MWH

(based on Sales to Ultimate Customers in 2003, a 1.9% Growth Rate less Governor's proposed energy growth reductions)

		2006	2007	2008	2009	2010	2011	2012
	Governor's Proposed Wind Min	**75%**	**75%**	**75%**	**75%**	**75%**	**75%**	**75%**
	Governor's Proposed Goals	**2%**	**3%**	**4%**	**5%**	**6%**	**7%**	**8%**
		1.50%	**2.25%**	**3.00%**	**3.75%**	**4.50%**	**5.25%**	**6.00%**
Company	**2003 Bundled Sales**							
ComEd	58,792,984	931,384	1,423,620	1,934,226	2,461,419	3,009,823	3,578,178	4,163,148
AmerenIP	13,016,543	206,205	315,184	428,230	544,949	666,363	792,195	921,705
AmerenCIPS	7,169,877	113,583	173,612	235,881	300,173	367,052	436,363	507,701
AmerenCILCO	5,906,979	93,577	143,032	194,333	247,301	302,399	359,502	418,275
AmerenUE	3,213,081	50,901	77,802	105,707	134,518	164,489	195,550	227,519
MidAmerican	1,807,963	28,641	43,778	59,480	75,692	92,556	110,034	128,022
Interstate Power	346,231	5,485	8,384	11,391	14,495	17,725	21,072	24,517
South Beloit	203,592	3,225	4,930	6,698	8,524	10,423	12,391	14,416
Mt. Carmel	144,762	2,293	3,505	4,763	6,061	7,411	8,810	10,251
Total	90,602,012	1,435,295	2,193,848	2,980,708	3,793,131	4,638,241	5,514,095	6,415,554
Company	**Bundled + DS-PPO**							
ComEd	67,934,518	1,076,202	1,644,975	2,234,972	2,844,137	3,477,811	4,134,537	4,810,462
AmerenIP	16,204,931	256,715	392,388	533,125	678,433	829,588	986,242	1,147,476
AmerenCIPS	7,506,390	118,914	181,761	246,952	314,261	384,279	456,844	531,530
AmerenCILCO	5,906,979	93,577	143,032	194,333	247,301	302,399	359,502	418,275
AmerenUE	3,213,081	50,901	77,802	105,707	134,518	164,489	195,550	227,519
MidAmerican	1,807,963	28,641	43,778	59,480	75,692	92,556	110,034	128,022
Interstate Power	346,231	5,485	8,384	11,391	14,495	17,725	21,072	24,517
South Beloit	203,592	3,225	4,930	6,698	8,524	10,423	12,391	14,416
Mt. Carmel	144,762	2,293	3,505	4,763	6,061	7,411	8,810	10,251
Total	103,268,447	1,635,953	2,500,555	3,397,420	4,323,422	5,286,681	6,284,982	7,312,468
Company	**Bundled + DS-All**							
AmerenUE	85,700,744	1,357,650	2,075,168	2,819,462	3,587,935	4,387,327	5,215,801	6,068,494
AmerenCIPS	18,599,486	294,648	450,370	611,903	778,683	952,174	1,131,976	1,317,035
AmerenIP	8,508,626	134,792	206,029	279,925	356,221	435,587	517,840	602,498
AmerenCILCO	5,906,979	93,577	143,032	194,333	247,301	302,399	359,502	418,275
AmerenCILCO	3,213,081	50,901	77,802	105,707	134,518	164,489	195,550	227,519
Interstate Power	1,807,963	28,641	43,778	59,480	75,692	92,556	110,034	128,022
MidAmerican	346,231	5,485	8,384	11,391	14,495	17,725	21,072	24,517
Mt. Carmel	203,592	3,225	4,930	6,698	8,524	10,423	12,391	14,416
South Beloit	144,762	2,293	3,505	4,763	6,061	7,411	8,810	10,251
Total	124,431,464	1,971,213	3,012,999	4,093,661	5,209,430	6,370,091	7,572,977	8,811,027

Staff Proposed MWH of Total Renewable Energy Production to be Acquired

(based on Sales to Ultimate Customers in 2003, a 1.9% Growth Rate less Staff's proposed energy growth reductions)

		2007	2008	2009	2010	2011	2012	2013
Company	**2003 Bundled Sales**	**2%**	**3%**	**4%**	**5%**	**6%**	**7%**	**8%**
ComEd	58,792,984	1,265,440	1,934,226	2,625,513	3,344,248	4,089,346	4,857,006	5,656,330
AmerenIP	13,016,543	280,164	428,230	581,279	740,404	905,366	1,075,323	1,252,290
AmerenCIPS	7,169,877	154,322	235,881	320,185	407,835	498,701	592,318	689,796
AmerenCILCO	5,906,979	127,140	194,333	263,787	335,999	410,860	487,987	568,296
AmerenUE	3,213,081	69,157	105,707	143,486	182,766	223,486	265,439	309,123
MidAmerican	1,807,963	38,914	59,480	80,738	102,840	125,753	149,359	173,940
Interstate Power	346,231	7,452	11,391	15,462	19,694	24,082	28,603	33,310
South Beloit	203,592	4,382	6,698	9,092	11,581	14,161	16,819	19,587
Mt. Carmel	144,762	3,116	4,763	6,465	8,234	10,069	11,959	13,927
Total	90,602,012	1,950,087	2,980,708	4,046,006	5,153,601	6,301,823	7,484,813	8,716,600
Company	**Bundled + DS-PPO**	**2%**	**3%**	**4%**	**5%**	**6%**	**7%**	**8%**
ComEd	67,934,518	1,462,200	2,234,972	3,033,746	3,864,234	4,725,185	5,612,206	6,535,815
AmerenIP	16,204,931	348,789	533,125	723,662	921,765	1,127,134	1,338,722	1,559,037
AmerenCIPS	7,506,390	161,565	246,952	335,212	426,977	522,107	620,118	722,172
AmerenCILCO	5,906,979	127,140	194,333	263,787	335,999	410,860	487,987	568,296
AmerenUE	3,213,081	69,157	105,707	143,486	182,766	223,486	265,439	309,123
MidAmerican	1,807,963	38,914	59,480	80,738	102,840	125,753	149,359	173,940
Interstate Power	346,231	7,452	11,391	15,462	19,694	24,082	28,603	33,310
South Beloit	203,592	4,382	6,698	9,092	11,581	14,161	16,819	19,587
Mt. Carmel	144,762	3,116	4,763	6,465	8,234	10,069	11,959	13,927
Total	103,268,447	2,222,715	3,397,420	4,611,650	5,874,090	7,182,837	8,531,213	9,935,206
Company	**Bundled + DS-All**	**2%**	**3%**	**4%**	**5%**	**6%**	**7%**	**8%**
AmerenUE	85,700,744	1,844,594	2,819,462	3,827,131	4,874,808	5,960,915	7,079,910	8,245,060
AmerenCIPS	18,599,486	400,329	611,903	830,596	1,057,971	1,293,687	1,536,541	1,789,411
AmerenIP	8,508,626	183,137	279,925	379,969	483,986	591,817	702,915	818,594
AmerenCILCO	5,906,979	127,140	194,333	263,787	335,999	410,860	487,987	568,296
AmerenCILCO	3,213,081	69,157	105,707	143,486	182,766	223,486	265,439	309,123
Interstate Power	1,807,963	38,914	59,480	80,738	102,840	125,753	149,359	173,940
MidAmerican	346,231	7,452	11,391	15,462	19,694	24,082	28,603	33,310
Mt. Carmel	203,592	4,382	6,698	9,092	11,581	14,161	16,819	19,587
South Beloit	144,762	3,116	4,763	6,465	8,234	10,069	11,959	13,927
Total	124,431,464	2,678,221	4,093,661	5,556,726	7,077,879	8,654,831	10,279,532	11,971,249

Minimum Amount of Wind-Powered MWH based

(based on Sales to Ultimate Customers in 2003, a 1.9% Growth Rate less Staff's proposed energy growth reductions)

		2007	2008	2009	2010	2011	2012	2013
	Governor's Proposed Wind Min	**75%**	**75%**	**75%**	**75%**	**75%**	**75%**	**75%**
	Staff's Proposed Goals	**2%**	**3%**	**4%**	**5%**	**6%**	**7%**	**8%**
		1.50%	**2.25%**	**3.00%**	**3.75%**	**4.50%**	**5.25%**	**6.00%**
Company	**2003 Bundled Sales**							
ComEd	58,792,984	949,080	1,450,669	1,969,135	2,508,186	3,067,010	3,642,754	4,242,248
AmerenIP	13,016,543	210,123	321,173	435,959	555,303	679,024	806,492	939,217
AmerenCIPS	7,169,877	115,742	176,911	240,138	305,876	374,026	444,238	517,347
AmerenCILCO	5,906,979	95,355	145,750	197,841	251,999	308,145	365,990	426,222
AmerenUE	3,213,081	51,868	79,280	107,615	137,074	167,614	199,079	231,842
MidAmerican	1,807,963	29,185	44,610	60,554	77,130	94,315	112,020	130,455
Interstate Power	346,231	5,589	8,543	11,596	14,771	18,062	21,452	24,983
South Beloit	203,592	3,287	5,023	6,819	8,686	10,621	12,614	14,690
Mt. Carmel	144,762	2,337	3,572	4,848	6,176	7,552	8,969	10,445
Total	90,602,012	1,462,565	2,235,531	3,034,505	3,865,201	4,726,367	5,613,610	6,537,450
Company	**Bundled + DS-PPO**							
ComEd	67,934,518	1,096,650	1,676,229	2,275,310	2,898,176	3,543,889	4,209,155	4,901,861
AmerenIP	16,204,931	261,592	399,844	542,747	691,324	845,350	1,004,041	1,169,278
AmerenCIPS	7,506,390	121,174	185,214	251,409	320,232	391,580	465,088	541,629
AmerenCILCO	5,906,979	95,355	145,750	197,841	251,999	308,145	365,990	426,222
AmerenUE	3,213,081	51,868	79,280	107,615	137,074	167,614	199,079	231,842
MidAmerican	1,807,963	29,185	44,610	60,554	77,130	94,315	112,020	130,455
Interstate Power	346,231	5,589	8,543	11,596	14,771	18,062	21,452	24,983
South Beloit	203,592	3,287	5,023	6,819	8,686	10,621	12,614	14,690
Mt. Carmel	144,762	2,337	3,572	4,848	6,176	7,552	8,969	10,445
Total	103,268,447	1,667,037	2,548,065	3,458,738	4,405,567	5,387,128	6,398,409	7,451,405
Company	**Bundled + DS-All**							
AmerenUE	85,700,744	1,383,446	2,114,596	2,870,348	3,656,106	4,470,686	5,309,932	6,183,795
AmerenCIPS	18,599,486	300,247	458,927	622,947	793,478	970,265	1,152,406	1,342,059
AmerenIP	8,508,626	137,353	209,943	284,977	362,989	443,863	527,186	613,946
AmerenCILCO	5,906,979	95,355	145,750	197,841	251,999	308,145	365,990	426,222
AmerenCILCO	3,213,081	51,868	79,280	107,615	137,074	167,614	199,079	231,842
Interstate Power	1,807,963	29,185	44,610	60,554	77,130	94,315	112,020	130,455
MidAmerican	346,231	5,589	8,543	11,596	14,771	18,062	21,452	24,983
Mt. Carmel	203,592	3,287	5,023	6,819	8,686	10,621	12,614	14,690
South Beloit	144,762	2,337	3,572	4,848	6,176	7,552	8,969	10,445
Total	124,431,464	2,008,666	3,070,246	4,167,544	5,308,409	6,491,123	7,709,649	8,978,437

Appendix C: Rate Impact Test Applied to Illinois Utilities Based Sales to Ultimate Customers in 2003

Sales to Ultimate Customers in 2003 ($)

Company	Bundled	0.5%	1.0%	1.5%	2.0%
ComEd	$4,555,373,568	$22,776,868	$45,553,736	$68,330,604	$91,107,471
AmerenIP	$906,773,760	$4,533,869	$9,067,738	$13,601,606	$18,135,475
AmerenCIPS	$467,108,772	$2,335,544	$4,671,088	$7,006,632	$9,342,175
AmerenCILCO	$357,781,397	$1,788,907	$3,577,814	$5,366,721	$7,155,628
AmerenUE	$135,086,769	$675,434	$1,350,868	$2,026,302	$2,701,735
MidAmerican	$109,380,481	$546,902	$1,093,805	$1,640,707	$2,187,610
Interstate Power	$18,960,491	$94,802	$189,605	$284,407	$379,210
South Beloit	$13,709,077	$68,545	$137,091	$205,636	$274,182
Mt. Carmel	$10,764,397	$53,822	$107,644	$161,466	$215,288
Total	$6,574,938,712	$32,874,694	$65,749,387	$98,624,081	$131,498,774

Company	Bundled + DS-PPO	0.5%	1.0%	1.5%	2.0%
ComEd	$5,091,670,575	$25,458,353	$50,916,706	$76,375,059	$101,833,412
AmerenIP	$1,044,648,715	$5,223,244	$10,446,487	$15,669,731	$20,892,974
AmerenCIPS	$486,382,975	$2,431,915	$4,863,830	$7,295,745	$9,727,660
AmerenCILCO	$357,781,397	$1,788,907	$3,577,814	$5,366,721	$7,155,628
AmerenUE	$135,086,769	$675,434	$1,350,868	$2,026,302	$2,701,735
MidAmerican	$109,380,481	$546,902	$1,093,805	$1,640,707	$2,187,610
Interstate Power	$18,960,491	$94,802	$189,605	$284,407	$379,210
South Beloit	$13,709,077	$68,545	$137,091	$205,636	$274,182
Mt. Carmel	$10,764,397	$53,822	$107,644	$161,466	$215,288
Total	$7,268,384,877	$36,341,924	$72,683,849	$109,025,773	$145,367,698

Company	Bundled + DS-All	0.5%	1.0%	1.5%	2.0%
ComEd	$5,470,099,171	$27,350,496	$54,700,992	$82,051,488	$109,401,983
AmerenIP	$1,050,647,241	$5,253,236	$10,506,472	$15,759,709	$21,012,945
AmerenCIPS	$492,116,341	$2,460,582	$4,921,163	$7,381,745	$9,842,327
AmerenCILCO	$357,781,397	$1,788,907	$3,577,814	$5,366,721	$7,155,628
AmerenUE	$135,086,769	$675,434	$1,350,868	$2,026,302	$2,701,735
MidAmerican	$109,380,481	$546,902	$1,093,805	$1,640,707	$2,187,610
Interstate Power	$18,960,491	$94,802	$189,605	$284,407	$379,210
South Beloit	$13,709,077	$68,545	$137,091	$205,636	$274,182
Mt. Carmel	$10,764,397	$53,822	$107,644	$161,466	$215,288
Total	$7,658,545,365	$38,292,727	$76,585,454	$114,878,180	$153,170,907

Source: "Illinois Electric Utilities, Comparison of Electric Sales Statistics For Calendar Years 2003 and 2002," revised May 25, 2005.

Appendix D: Load Response and Energy Efficiency Goals

Governor's Proposed Load Response and Energy Efficiency Goals, expressed in MWH, based on Sales to Ultimate Customers in 2003 and an Assumed Annual Growth Rate of 1.9%

	Governor's Proposed Goals			2006-2008	2009-2011	2012-2014	2015-2017
	Growth Rate	1.90%		10%	15%	20%	25%
Company	**Bundled**		**Avg Load Reduction Due to Efficiency Programs**				
ComEd	58,792,984			118,210	187,615	264,684	350,075
AmerenIP	13,016,543			26,171	41,537	58,600	77,505
AmerenCIPS	7,169,877			14,416	22,880	32,279	42,692
AmerenCILCO	5,906,979			11,877	18,850	26,593	35,172
AmerenUE	3,213,081			6,460	10,253	14,465	19,132
MidAmerican	1,807,963			3,635	5,769	8,139	10,765
Interstate Power	346,231			696	1,105	1,559	2,062
South Beloit	203,592			409	650	917	1,212
Mt. Carmel	144,762			291	462	652	862
Total	90,602,012			182,165	289,121	407,887	539,477
Company	**Bundled + DS-PPO**		**Avg Load Reduction Due to Efficiency Programs**				
ComEd	67,934,518			136,590	216,786	305,839	404,507
AmerenIP	16,204,931			32,582	51,712	72,954	96,490
AmerenCIPS	7,506,390			15,092	23,954	33,794	44,696
AmerenCILCO	5,906,979			11,877	18,850	26,593	35,172
AmerenUE	3,213,081			6,460	10,253	14,465	19,132
MidAmerican	1,807,963			3,635	5,769	8,139	10,765
Interstate Power	346,231			696	1,105	1,559	2,062
South Beloit	203,592			409	650	917	1,212
Mt. Carmel	144,762			291	462	652	862
Total	103,268,447			207,632	329,541	464,911	614,898
Company	**Bundled + DS-All**		**Avg Load Reduction Due to Efficiency Programs**				
AmerenUE	85,700,744			172,311	273,480	385,822	510,293
AmerenCIPS	18,599,486			37,396	59,353	83,734	110,748
AmerenIP	8,508,626			17,108	27,152	38,306	50,663
AmerenCILCO	5,906,979			11,877	18,850	26,593	35,172
AmerenCILCO	3,213,081			6,460	10,253	14,465	19,132
Interstate Power	1,807,963			3,635	5,769	8,139	10,765
MidAmerican	346,231			696	1,105	1,559	2,062
Mt. Carmel	203,592			409	650	917	1,212
South Beloit	144,762			291	462	652	862
Total	124,431,464			250,183	397,074	560,187	740,910

Source: The growth rate of 1.9% is assumed for illustration purposes and is not meant to be a Staff prediction of growth rates for any of the Illinois electric utilities. This particular figure was taken from a recent EIA forecast for the electric industry in the U.S. The 2003 sales figures are taken from "Illinois Electric Utilities, Comparison of Electric Sales Statistics For Calendar Years 2003 and 2002," revised May 25, 2005.

Staff's Proposed Load Response and Energy Efficiency Goals, expressed in MWH, based on Sales to Ultimate Customers in 2003 and an Assumed Annual Growth Rate of 1.9%

	Staff's Proposed Goals			2007-2008	2009-2011	2012-2014	2015-2017
	Growth Rate	1.90%		10%	15%	20%	25%
	2003 Sales in MWH						
Company	**Bundled**		**Avg Load Reduction Due to Efficiency Programs**				
ComEd	58,792,984			119,319	187,615	264,684	350,075
AmerenIP	13,016,543			26,665	41,537	58,600	77,505
AmerenCIPS	7,169,877			14,688	22,880	32,279	42,692
AmerenCILCO	5,906,979			12,101	18,850	26,593	35,172
AmerenUE	3,213,081			6,582	10,253	14,465	19,132
MidAmerican	1,807,963			3,704	5,769	8,139	10,765
Interstate Power	346,231			709	1,105	1,559	2,062
South Beloit	203,592			417	650	917	1,212
Mt. Carmel	144,762			297	462	652	862
Total	90,602,012			185,604	289,121	407,887	539,477
Company	**Bundled + DS-PPO**		**Avg Load Reduction Due to Efficiency Programs**				
ComEd	67,934,518			139,168	216,786	305,839	404,507
AmerenIP	16,204,931			33,197	51,712	72,954	96,490
AmerenCIPS	7,506,390			15,377	23,954	33,794	44,696
AmerenCILCO	5,906,979			12,101	18,850	26,593	35,172
AmerenUE	3,213,081			6,582	10,253	14,465	19,132
MidAmerican	1,807,963			3,704	5,769	8,139	10,765
Interstate Power	346,231			709	1,105	1,559	2,062
South Beloit	203,592			417	650	917	1,212
Mt. Carmel	144,762			297	462	652	862
Total	103,268,447			211,552	329,541	464,911	614,898
Company	**Bundled + DS-All**		**Avg Load Reduction Due to Efficiency Programs**				
AmerenUE	85,700,744			175,564	273,480	385,822	510,293
AmerenCIPS	18,599,486			38,102	59,353	83,734	110,748
AmerenIP	8,508,626			17,430	27,152	38,306	50,663
AmerenCILCO	5,906,979			12,101	18,850	26,593	35,172
AmerenCILCO	3,213,081			6,582	10,253	14,465	19,132
Interstate Power	1,807,963			3,704	5,769	8,139	10,765
MidAmerican	346,231			709	1,105	1,559	2,062
Mt. Carmel	203,592			417	650	917	1,212
South Beloit	144,762			297	462	652	862
Total	124,431,464			254,906	397,074	560,187	740,910

Source: The growth rate of 1.9% is assumed for illustration purposes and is not meant to be a Staff prediction of growth rates for any of the Illinois electric utilities. This particular figure was taken from a recent EIA forecast for the electric industry in the U.S. The 2003 sales figures are taken from "Illinois Electric Utilities, Comparison of Electric Sales Statistics For Calendar Years 2003 and 2002," revised May 25, 2005.

Appendix E:
Additional Details Concerning PJM's Load Response Programs

PJM's **Economic Load Response Program** is designed to provide an incentive to end-use customers or curtailment service providers to enhance the ability and opportunity for reduction of consumption when PJM Locational Marginal Prices ("LMP") prices are high. The program purposefully incorporates incentives that are greater than strict economics would provide for the same curtailment. According to PJM, this departure from economics is justified to overcome initial barriers to end-use customer load response. This program is not intended to be a permanent fix to the lack of load response seen in the PJM markets today. According to PJM, the designers of this program contemplate that when existing market barriers are removed and end-use customers are better able to respond to real time prices, the need for this program and others like it will disappear. Until that happens, however, programs like this are necessary for fully functioning markets. The Economic Load Response Program includes "real-time" and "day-ahead" options. The real-time option provides a mechanism by which any qualified Load Serving Entity ("LSE") or Curtailment Service Provider ("CSP") may offer end-use customers the opportunity to, or end-use customers that are PJM members independently may choose to, reduce load they draw from the PJM system during times of high prices and receive payments based on real time LMP for the reductions. The day-ahead option provides a mechanism by which qualified LSEs or CSPs may offer end-use customers that are PJM members the opportunity to, or end-use customers independently may choose to, commit to a reduction of load they draw from the PJM system in advance of real time operations and receive payments based on day-ahead LMP for the reductions.

The **Emergency Load Response Program** is designed to provide a method by which end-use customers may be compensated by PJM for voluntarily reducing load during an emergency event.

On April 26, 2005, PJM's Market Implementation Committee ("MIP") presented a package of proposed enhancements designed to facilitate integration of Demand Side Response into PJM's Markets. The enhancements in this package include:

Forward Energy Reserve Market – Designed to provide a forward market for a commodity that could reasonably, but not exclusively, be sourced from a demand response resource. The Forward Energy Reserve (FER) Market is a forward market that will provide an explicit demand response resource a market price based system dispatch and forward price signals. Key elements and upcoming milestones include:

Call Option for Energy
Monthly Auctions for 24 Months Forward
Peak Period Product
Product Specifications in Smaller Increments of Energy
September, 2005 – Endorsement by PJM's Members Committee
June, 2006 – Target Implementation

Emergency Load Response Program Enhancements – Market rules designed to link energy payments more closely to market, providing operators with the ability to

more granularly dispatch demand resources. The market enhancements are also designed to reduce performance penalties in an effort to achieve greater comparability with penalties for generation resources, and will ultimate combine the energy and capacity components in one construct**.**

Program Participation
Requirements for Setting LMP
Elimination of $500 Floor
Replace with Min. Dispatch Price
Interaction with Active Load Management
Reduction of the ALM Deficiency Charge
Transition for certain ALM contracts accommodated
September, 2005 – Endorsement by PJM's Members Committee
January, 2006 – Target Implementation

Integration of Demand Resources into Ancillary Services Markets – Market rules designed to provide Demand Resources with access to ancillary services markets, while appropriately considering reliability concerns.

Rename Spinning Reserve Market to Synchronized Reserve Market
Allow Demand Resources to participate in hourly Ancillary Services Markets
Telemetry and Testing Requirements for Demand Resources
Similar Compensation as Generators
No Opportunity Costs
Shutdown Costs defined for Demand Resources
Phase I – Implementation in MAAC
September, 2005 – Endorsement by PJM's Members Committee
January, 2006 – Target Implementation

Economic Load Response – Transition and Permanent Design – Market rules currently under development at Demand Side Response Working Group.

March, 2005 – Begin Discussion at DSRWG

Source: PJM web site

Appendix F: Additional Details Concerning ComEd's Current Demand Response and Energy Efficiency Programs

The attached ppt file contains a Microsoft Power Point presentation provided by ComEd describing its current demand response and energy efficiency programs.

Energy Efficiency / DSM Programs

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