

**BEFORE THE ILLINOIS POLLUTION CONTROL BOARD**

**In the Matter of:** )  
 )  
**AMENDMENTS TO** ) **R18-20**  
**35 ILL. ADM. CODE 225.233,** ) **(Rulemaking – Air)**  
**MULTI-POLLUTANT STANDARDS (MPS)** )

**NOTICE OF FILING**

To: ALL PARTIES ON THE ATTACHED SERVICE LIST

PLEASE TAKE NOTICE that I have today electronically filed with the Office of the Clerk of the Illinois Pollution Control Board the attached **PREFILED TESTIMONY OF RICK DIERICX** and **PREFILED TESTIMONY OF DEAN ELLIS**, copies of which are herewith served upon you.

\_\_\_\_\_  
/s/ Amy Antonioli  
Amy Antonioli

Dated: December 11, 2017

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**PREFILED TESTIMONY OF RICK DIERICX**

**I. Introduction**

My name is Aric (Rick) Diericx, and I am presenting testimony on behalf of Dynegy Midwest Generation, LLC (“DMG”), Illinois Power Generating Company, Illinois Power Generating, LLC and Electric Energy, Inc. (collectively, “Dynegy”) in support of the Illinois Environmental Protection Agency’s (“Illinois EPA” or “Agency”) Multi-Pollutant Standard (“MPS”) Amendments rulemaking proposal. I am the Managing Director–Environmental Compliance. I have been employed in this and similar positions at Dynegy for the past 17 years. Previously, I was employed by Illinois Power Company since 1979 in its environmental department. Illinois Power and Dynegy merged in 1999/2000. As part of my duties, I oversee permitting and regulatory development and compliance for air, water, and waste issues at the DMG and Illinois Power Holding Company (“IPH”) power plants.

My testimony addresses (1) the development of the Illinois Mercury Rule (35 Ill. Adm. Code 225 Subpart B) and MPS provisions, (2) changes in plant ownership and the regulatory landscape since promulgation of the MPS that support the need for Illinois EPA’s proposal, (3) operational benefits of the proposal, (4) environmental protection, (5) the proposed emission caps, and (6) the equitable transfer of emission allocations should the ownership of a plant change. Dynegy supports Illinois EPA’s proposal because it recognizes the new ownership structure of the

power plants subject to the MPS and sets limits on NO<sub>x</sub> and SO<sub>2</sub> emissions that will benefit the People of Illinois. In presenting this testimony, I speak solely on behalf of Dynegey.

## **II. Development of the Mercury Rule**

In January 2006, Governor Rod Blagojevich announced his intent to pursue approval of the most aggressive mercury reduction plan in the nation. The plan, which went far beyond the federal mercury program and any other state program, focused on cutting mercury emissions by 90% from coal-burning power plants by mid-2009. The Blagojevich Administration worked closely with the environmental groups for months before the plan was made public. Notably, the Administration did not consult with the electric generating industry—the industry directly impacted—while the plan was being developed.

The electric generating companies in Illinois saw the plan for the first time when it was filed with the Illinois Pollution Control Board (“Board”) by the Illinois Environmental Protection Agency (“Illinois EPA” or “Agency”) as a rulemaking proposal. *In the Matter of: Proposed new 35 Ill. Adm. Code 225 Control of Emissions from Large Combustion Sources (Mercury)*, R06-25 (Dec. 21, 2006). The Illinois Mercury Rule (35 Ill. Adm. Code 225 Subpart B) presented very challenging compliance obligations for the largest electric generating systems in Illinois and all impacted electric generating companies opposed the rule. Prior to the adoption of the MPS, it was owners of the largest electric generating systems in Illinois that began exploring ways to work with the Administration and Illinois EPA towards a unique regulatory approach that would provide environmental and public health co-benefits by regulating multiple pollutants rather than just mercury. This approach would provide reductions of SO<sub>2</sub> and NO<sub>x</sub> in addition to an achievable

mercury compliance level and date. Ameren Energy Resources<sup>1</sup> (“Ameren”) was the first to work out an alternative plan that involved allowing limited flexibility in complying with the mercury standards in exchange for commitments to also reduce SO<sub>2</sub> and NO<sub>x</sub> emissions from Ameren’s power plants. This initial MPS agreement led to a similar agreement with Dynegy Midwest Generation, Inc. These agreements would be amended into the rule and are referred to as the Multi-Pollutant Standard or “MPS” (35 Ill. Adm. Code 225.233) which covered units owned by Ameren and Dynegy.<sup>2</sup>

The creation and promulgation of the MPS was both complex and challenging. The multi-pollutant approach took into consideration existing regulatory and permitting requirements at the federal and state level. Importantly, the MPS does not contain requirements that specific pollution control equipment be installed at specific plants. Instead, it imposes annual and ozone season-based emission rate limits and deadlines to achieve those rate limits; annual rate limits that are far more stringent than anything imposed at the federal level and almost every other state but that were not designed to achieve or maintain compliance with any short-term National Ambient Air Quality Standard (“NAAQS”).

The structure of the MPS contemplated that all plants owned by a single company would reside in the same MPS group and be subject to fleet-wide annual SO<sub>2</sub> and annual and ozone season NO<sub>x</sub> emission rate limits, with no unit-specific rate limits, in exchange for limited flexibility in complying with the mercury standards. Unfortunately, the MPS was not structured to respond to dramatic and unanticipated changes in asset ownership, the retirement of multiple generating units,

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<sup>1</sup> As authorized agent for Ameren Energy Generating Company, Ameren Energy Resources Generating Company, and Electric Energy, Inc.

<sup>2</sup> Notably, there was no technical support document or statement of reasons prepared by the Illinois EPA or submitted to the Board for the MPS.

a rapidly evolving regulatory landscape and the dynamic nature of the electricity market and broader economy.

In 2007, and in compliance with the MPS, DMG and Ameren filed notices voluntarily electing to accept annual SO<sub>2</sub> and annual and ozone season NO<sub>x</sub> rate limits in order to obtain the extended mercury compliance dates. A total of thirty one DMG and Ameren units were subject to the MPS at that time. Ameren owned twenty one units and DMG owned ten units. The units DMG owned became the DMG MPS Group and the units Ameren owned became the Ameren MPS Group. The MPS imposed different annual and ozone season emission rate limits and deadlines to achieve those rate limits specific to each MPS group none of which increased in stringency after 2015. Below are tables showing which plants are currently in the Ameren and Dynegy MPS Groups and what emission rate limits apply to those groups of plants.

**DMG MPS GROUP**

Year	NO <sub>x</sub> (lb/mmBtu)		SO <sub>2</sub> (lb/mmBtu)
	Ozone Season	Annual	
<b>2017</b>	0.106	0.099	0.19
<b>2018</b>	0.106	0.099	0.19
<b>2019</b>	0.106	0.099	0.19
<b>2020</b>	0.106	0.099	0.19

\*35 Ill. Adm. Code 225.233(e)(1)(B), (2)(B) ); *Mercury*, R06-25, Joint Statement of IEPA and Dynegy Midwest Generation (Aug. 21, 2006), pg. 4.

\*Applies to units at the Baldwin, Hennepin, and Havana Power Plants.

**AMEREN MPS GROUP**

Year	NO <sub>x</sub> (lb/mmBtu)		SO <sub>2</sub> (lb/mmBtu)
	Ozone Season	Annual	
<b>2017</b>	0.11	0.11	0.23
<b>2018</b>	0.11	0.11	0.23
<b>2019</b>	0.11	0.11	0.23
<b>2020</b>	0.11	0.11	0.23

\*35 Ill. Adm. Code 225.233(e)(3), as modified by R09-10, PCB 12-126 and PCB 14-10, and termination of the PCB 14-10 variance.

\*Applies to units at the Coffeen, Duck Creek, E.D. Edwards, Joppa, and Newton Power Plants

**III. Changes in Plant Ownership and the Regulatory Landscape Since Promulgation of the MPS**

While the development of the MPS took into consideration existing regulatory and permitting requirements at the federal and state level it failed to account for changes in ownership, retirements, changes in the energy and capacity markets, and changes in the regulatory landscape. These changes are discussed below and support the need for the proposal.

In December 2013, Dynegy Inc.,<sup>3</sup> through a subsidiary, acquired most of Ameren's electric generating assets in Illinois. As a result, Dynegy now owns all of the operating units in the DMG MPS Group and Ameren MPS Group, which constitute all of the units subject to the MPS. However, because the two MPS groups were owned by different companies in 2007 when they opted into the MPS, the units are forced to remain in two separate MPS groups that are subject to different annual and ozone season emission rate limits. In addition to the unanticipated change in ownership of the covered MPS units, since 2007 the number of units covered by the MPS has shrunk dramatically -- thirteen units having retired, *i.e.*, 42 percent of the original units covered by the MPS have retired. Currently, there are eighteen units in the MPS: six in the DMG MPS Group and twelve in the Ameren MPS Group.

Many of the federal regulations governing SO<sub>2</sub> and NO<sub>x</sub> that were either in place or being considered when the MPS was enacted have since been amended or even repealed. For example, in May 2005, EPA promulgated the Clean Air Mercury Rule ("CAMR") that established a cap on mercury emissions from coal-fired electric generating units ("EGUs") serving generators with nameplate capacity greater than 25 megawatts. 70 Fed. Reg. 28606 (May 18, 2005). This rule was the springboard for Illinois' more stringent Mercury Rule. However, in February 2008, the

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<sup>3</sup> Dynegy Inc. is the ultimate parent company of DMG, Illinois Power Generating Company, Illinois Power Resources Generating, LLC and Electric Energy, Inc.

United States Court of Appeal for the District of Columbia vacated CAMR. *New Jersey v. EPA*, 517 F.3d 574, 583 (D.C. Cir. 2008). EPA subsequently adopted the Mercury and Air Toxics Standards (“MATS”) to control EGU emissions. 77 Fed. Reg. 9304 (Feb. 16, 2012). MATS took effect April 16, 2015 and addresses emissions of hazardous air pollutants from coal-fired utility boilers, including emissions of mercury and heavy metals. The MATS rule has also been appealed to the D.C. Circuit, but on April 27, 2017, the D.C. Circuit granted EPA’s request to delay oral arguments and the litigation has not progressed since that time. *Murray Energy Corp. v. U.S. EPA et al.*, Case No. 16-1127 (D.C. Circuit).

In May 2005, EPA promulgated the Clean Air Interstate Rule (“CAIR”), which required reductions of SO<sub>2</sub> and NO<sub>x</sub> to address interstate transport of ozone and fine particulate matter pollution. 70 Fed. Reg. 25162 (May 12, 2005). CAIR established caps on emissions of SO<sub>2</sub> and NO<sub>x</sub> for coal-fired EGUs. *Id.* In July 2008, the D.C. Circuit Court of Appeals vacated CAIR. *See North Carolina v. EPA*, 531 F.3d 896, 929-30 (D.C. Cir. 2008). The court later remanded CAIR without vacatur and ordered CAIR to remain effective until EPA replaced it with a new rule. *See North Carolina v. EPA*, 550 F.3d 1176, 1777-78 (D.C. Cir. 2008).

In an effort to replace CAIR, EPA promulgated the Cross-State Air Pollution Rule (“CSAPR”) in 2011 to address the transport of ozone pollution. 76 Fed. Reg. 48208 (Aug. 8, 2011). This rule was also vacated in August 2012. *EPA v. EME Homer City*, 696 F.3d 7 (D.C. Cir. 2012). On April 29, 2014, the U.S. Supreme Court reversed the D.C. Circuit’s vacatur, lifted the stay and shifted CSAPR compliance deadlines for NO<sub>x</sub> emission reductions by three years. As a result, CSAPR took effect in 2015 and CSAPR Phase 2 implementation began in 2017. Illinois is covered by both CSAPR for fine particles (SO<sub>2</sub> and annual NO<sub>x</sub>), and the CSAPR Update rule for ozone (ozone season NO<sub>x</sub>).



The changing federal SO<sub>2</sub> and NO<sub>x</sub> requirements further complicate Dynegey's compliance strategy. Especially since recovery of compliance costs are not guaranteed for the Illinois generating plants, unlike competing plants in neighboring states.

All of these unpredictable circumstances, which were not, and indeed likely could not have been addressed when the MPS was first promulgated, support the need for the proposal.

#### **IV. Operational Benefits of the Proposal**

Even though the proposal places new and reduced fixed limits on allowable annual and ozone season emissions from our plants, and commits us to run certain pollution control equipment year round, we support the Agency's proposal because it will provide smart regulation through consistency, certainty, and clarity, and restore some operational flexibility inherent in the original MPS. Consistency increases because the proposed format (an emissions cap) is more in line with existing federal and state regulations on NO<sub>x</sub> and SO<sub>2</sub>, such as the Cross State Air Pollution Rule, Acid Rain Program and air pollution control permit limits, all of which are in the form of annual mass caps in tons. The proposal is also more consistent with the original rule because it would allow all units owned by the same company to be in a single MPS group consisting of a number of units that is consistent with the number of units originally in each MPS group.

Certainty increases because the revised rule is far less likely to require future change through variances, an adjusted standard, and/or rule revisions. This is because, with the benefit of experience, the rule revisions are designed to be more lasting. For example, the rule will for the first time address how the limits change and what portion of the mass limit transfers to a new owner if units are sold.

Clarity increases because a simplified single combined mass limit applies to all covered plants instead of two separate rate limits applicable to two separate groups that require more compliance calculations involving averaging. Compliance with cap limits is more readily

demonstrated and verified than compliance with rate limits as mass emissions are directly measured. Mass emissions of both NO<sub>x</sub> and SO<sub>2</sub> are continually monitored with Continuous Emissions Monitoring Systems (“CEMS”) and the data is periodically reported to both the U.S. EPA and Illinois EPA. As opposed to annual and ozone season emission rates where multiple variables are necessarily gathered and the actual rate must then be calculated and averaged with other calculated rates from other units. Furthermore, compliance demonstrations are more straightforward because the proposal simply involves reporting the annual emissions of NO<sub>x</sub> and SO<sub>2</sub> and seasonal emissions of NO<sub>x</sub> as measured by the CEMS. This also allows for a simple check of compliance by Illinois EPA and others as actual annual emissions are directly compared to the allowable annual mass caps. All of this data is available to the public on U.S. EPA’s Clean Air Markets Program Data website.

The proposal reinstates a level of operational flexibility consistent with the original MPS. The proposal establishes two annual emission tonnage limits applicable across the entire MPS group of 18 units owned by a single owner, instead of two separate sets of annual emission rate limits applying to two groups owned by a single owner. Including more units in the tonnage cap calculations allows for the flexibility to operate those units at higher and lower capacity factors in response to market demand or to not operate them during off-peak periods, all the while meeting state environmental performance standards. The original MPS was designed to allow for averaging among up to 21 units owned by a single owner in order to provide such flexibility.

Flexibility is much needed when required to comply with very stringent SO<sub>2</sub> emission rates. For example, the sulfur content of the coal the fleet burns has the greatest impact on its SO<sub>2</sub> emissions and its ability to meet the annual rate-based limits. While the fleet burns very low sulfur

coal, an increase in sulfur content of as little as 0.05% by weight for six months can increase the coal's combusted emission rate by 20%.

If the proposed rule was adopted and if such an increase in coal sulfur content caused the projected tonnage to exceed the year-end cap, Dynegy could get back on target to meet the year-end tonnage cap by reducing the generation at plants or temporarily shutting units down. However, with the current rate-based limits, even shutting the entire fleet down for the rest of the year would not bring the fleet back into compliance because the rate emitted would remain the same. The only way to bring the fleet back into compliance with the rate-based limits is to increase the heat input in the denominator faster than the pounds of SO<sub>2</sub> in the numerator is increasing. Increasing the heat input also means the fleet would emit more PM, NO<sub>x</sub>, CO and CO<sub>2</sub> emissions.

Also, the Ameren MPS Group is especially at risk when a forced outage brings a scrubbed unit offline. A forced outage is when a generating unit becomes unavailable due to an unexpected breakdown. Every time a scrubbed unit experiences a forced outage a similarly sized unscrubbed unit in the group must be brought off-line to ensure compliance with the rate-based limits. Having to bring a fully functional unit off-line precludes Dynegy from economically dispatching units and can create some of the grid stability and reliability issues Dean Ellis discusses in his testimony. Switching to the proposed emission caps eliminates this risk.

Peak customer demand for electricity for heating or cooling occurs in the summer and winter. The units often operate at lower capacity factors during the spring and fall when demand is low. The proposed rule would give the fleet the ability to run units less during the spring and fall when there is less demand; units would not be operating as much during those months solely to meet the current rate-based limits.

**V. Environmental Protection**

Although the proposal addresses the core challenges faced by Dynegy resulting from two sets of emission rate limitations that apply to different plants within Dynegy's fleet, it also subjects Dynegy to several new and additional requirements that will ensure protection of the environment, public health and Illinois' regulatory obligations.

The proposal will *significantly reduce* the amount of emissions Dynegy is allowed to emit. This is an appropriate metric for evaluating the benefit of the rule because it represents the potential impact and stringency of a rule before and after a proposed change. Allowable emissions are also used by environmental regulators at the federal, state and local level as the metric for compliance with a rule. Compliance with most environmental emission standards is determined by comparing a source's actual emissions to the allowable emissions under the rule. If the source's actual emissions are less than the allowable emissions then the source is in compliance. Similarly, if a source's actual emissions are greater than the allowed emissions then the source is out of compliance. Furthermore, allowable hourly emissions are often the emissions used in air quality modeling. Such modeling is performed for a variety of reasons which include evaluations of air quality in an area, the area's status in regards to NAAQS, and to provide knowledge to regulators as they develop strategies for maintenance and achievement of the NAAQS.

Currently, as the Illinois EPA estimates, the combined MPS units are allowed to emit and are capable of emitting approximately 66,354 tons of SO<sub>2</sub> per year and 32,841 tons of NO<sub>x</sub> per year. The proposal would cap the amount of SO<sub>2</sub> and NO<sub>x</sub> emissions Dynegy is allowed to emit annually to 55,000 tons and 25,000 tons, respectively. This represents an approximate 17 percent reduction in allowable SO<sub>2</sub> emissions and 24 percent reduction in allowable NO<sub>x</sub> emissions. Since Dynegy would limit emissions to maintain a compliance safety margin below the new allowable limits, the lower allowable emission limits are also expected to further constrain actual annual

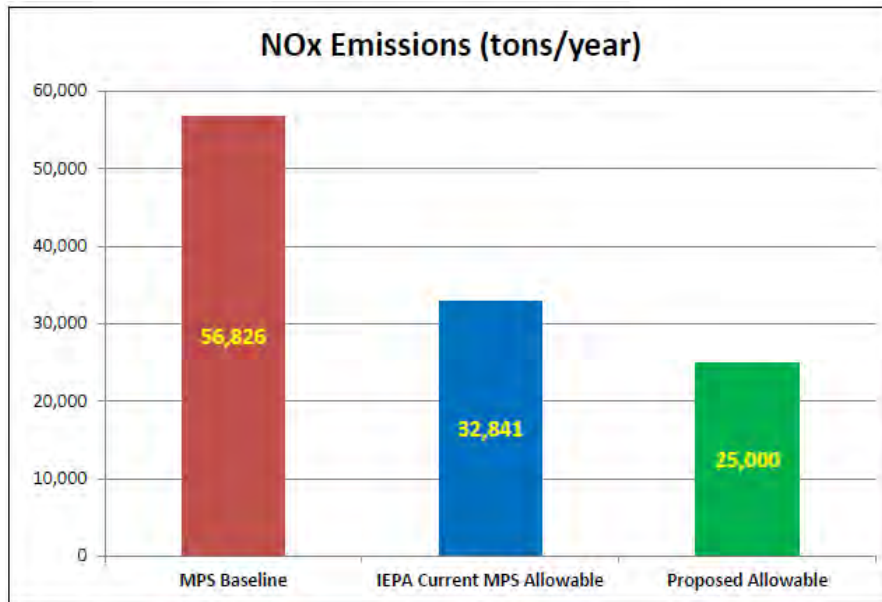
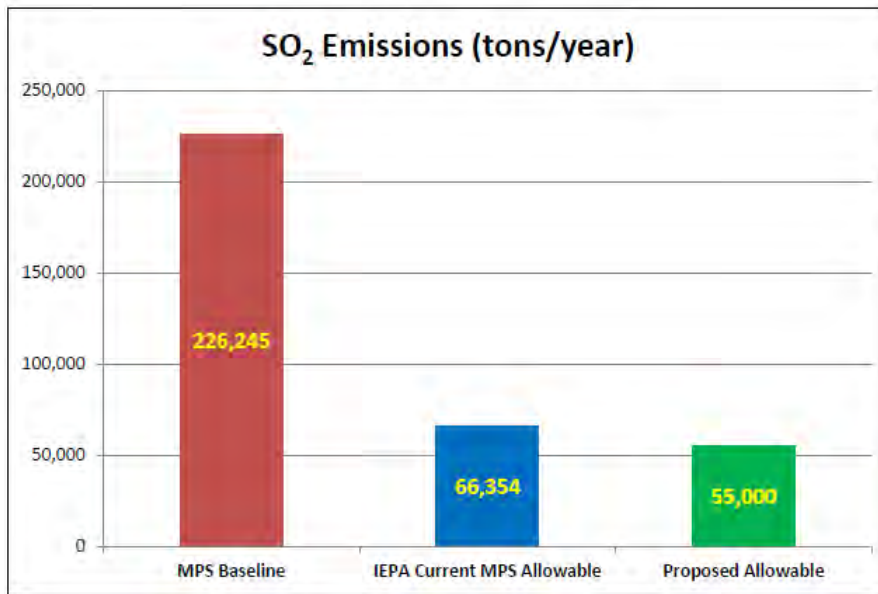
emissions. And since the proposal also imposes new and additional requirements on the Dynegy fleet (*e.g.*, mandatory operation of existing Selective Catalytic Reduction equipment year round; a lower NO<sub>x</sub> emission rate for the Baldwin, Edwards, Duck Creek, Havana, and Coffeen facilities during the ozone season; and a specific annual SO<sub>2</sub> tonnage cap for the Joppa Power Station), it will achieve an even *greater* reduction in allowable emissions.

The proposal will also ensure SO<sub>2</sub> and NO<sub>x</sub> reductions exceed those expected under the original MPS. Then Director of Illinois EPA, Douglas P. Scott, presented testimony on the benefits of the MPS to the U.S. Senate Committee on Environment and Public Works/Subcommittee on Clean Air and Nuclear Safety in 2009 (attached as Exhibit A). The baseline emissions (average annual emissions between 2003 and 2005) used to evaluate the benefits was 226,245 tons of SO<sub>2</sub> and 56,826 tons of NO<sub>x</sub>.<sup>4</sup> As discussed above, the Illinois EPA estimates, the combined MPS units are currently allowed to emit and are capable of emitting approximately 66,354 tons of SO<sub>2</sub> per year and 32,841 tons of NO<sub>x</sub> per year. This represents a 71% reduction in SO<sub>2</sub> and 42% reduction in NO<sub>x</sub> as compared to the MPS baseline. The proposal, which significantly reduces the allowable emissions, results in a minimum of 76% reduction of SO<sub>2</sub> and 56% reduction of NO<sub>x</sub> as compared to the MPS baseline.

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<sup>4</sup> I calculated this number by adding the baseline average emissions between 2003 and 2005 for the Ameren and Dynegy MPS Groups from the chart attached as Exhibit B. Exhibit B was prepared by IEPA during the Mercury Rulemaking to show baseline annual pollutant emission.

**Pollutant Reductions Under the MPS**



The proposal also allows Illinois EPA to use the reductions in allowable emissions and additional NO<sub>x</sub> and SO<sub>2</sub> requirements in meeting Illinois' Clean Air Act obligations. Such obligations include demonstrating compliance with various Regional Haze and State

Implementation Plan (“SIP”) requirements.<sup>5</sup> The proposal will result in additional reductions of, at a minimum, SO<sub>2</sub> allowable emissions by 953 tons and NO<sub>x</sub> allowable emissions by 2,951 tons from those Illinois used to demonstrate compliance with the Clean Air Act Regional Haze requirements. Moreover, once the proposal is finalized, Illinois EPA can perform air modeling using both the lower allowable NO<sub>x</sub> and SO<sub>2</sub> emissions and also account for the new annual SO<sub>2</sub> cap on the Joppa Power Station and new NO<sub>x</sub> controls requirements to demonstrate further progress in meeting the NAAQS goals, which are designed to be protective of human health and the environment.

Importantly, IEPA does not rely upon the MPS to attain or maintain the NAAQS. Therefore, a change in the MPS is not expected to adversely affect any NAAQS. The regulations relied upon to protect the NAAQS remain the same. Furthermore, the revised MPS reduces the allowable emissions, requires the continuous operation of Selective Catalytic Reduction equipment at five plants, requires a lower combined NO<sub>x</sub> seasonal emission average rate limit (0.10 lbs/mmbtu), and subjects Joppa to a specific SO<sub>2</sub> emissions cap, it is expected to further ensure ongoing compliance with the NAAQS. And since the proposal does not relax any short-term health-based air quality limits, it will have no adverse impact on any health-based NAAQS.

Independent of the MPS, actual emissions from the MPS plants and units may fluctuate due to the economy, weather, natural gas prices, scheduled and unscheduled unit outages and other factors. Although recent years’ actual emissions from the MPS units have been lower than historic

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<sup>5</sup> Per Illinois EPA, the original Illinois Regional Haze SIP anticipated an aggregate total reduction of 181,811 tons of annual SO<sub>2</sub> emissions by 2018 from the Dynegy and Ameren MPS groups and 51,727 tons of annual NO<sub>x</sub> emissions by 2018. IEPA Illinois EPA found that actual emissions data from 2015 indicate that greater reductions occurred at those sources by 2015 than were anticipated in Illinois’ original SIP submittal for the entire first implementation period ending in 2018. In fact, three years ahead of schedule, in 2015, these groups already exceeded projected emissions reductions: annual SO<sub>2</sub> emissions were reduced by 191,120 tons, and annual NO<sub>x</sub> emissions were reduced by 61,843 tons. *Five-Year Progress Report for Illinois Regional Haze State Implementation Plan*, AQPSTR 16-11, pages. 9-13 (Oct. 2016).

normal levels, the current MPS does not constrain emissions at these operating levels and emissions at any particular plant could return to or exceed prior permitted levels under both the existing MPS and the proposal. However, even if emissions were to increase, each MPS unit is subject to multiple emission standards for both NO<sub>x</sub> and SO<sub>2</sub> that are intended to maintain and attain the NAAQS. The proposal will not affect any of those requirements. Therefore, the total emissions, regardless of the proposal, will remain below levels protective of human health and the environment. *See* Table of Redundant Regulations attached hereto as Exhibit C.

For these reasons the proposal is protective of human health and the environment.

#### **VI. Emissions Caps Represent Real Limits**

Historically, annual emissions from Dynegy's units, like other generation units, have fluctuated for many reasons including the weather, economy, natural gas prices, and scheduled and unscheduled unit outages. Under the current MPS emission levels could increase significantly and far exceed recent year emission levels. As such, the future operation of any given unit may increase regardless of whether the unit is subject to an emission cap or emission rate limit. However, the proposal would ensure emission levels are less than historic normal levels. As recent as 2014, SO<sub>2</sub> emissions from MPS units were 59,806 tons versus a proposed cap of 55,000 tons. The ten year average SO<sub>2</sub> emissions from MPS units is 92,285 tons. In 2011, NO<sub>x</sub> emissions from MPS units were 27,430 tons compared to a proposed annual mass cap of 25,000 tons.

#### **VII. Transfer Allocations**

Currently, the MPS does not provide a way to modify an MPS group when plants are transferred from one owner to another. Given the nature and structure of the rule, and unlike any other air emission regulatory scheme on the books, the current MPS construct requires power plant owners subject to the MPS to "seek approval" from the Board of an ownership transfer as a condition of the sale. This constraint on commerce was never contemplated by the Agency or



power plant owners when crafting the MPS, and the Agency's proposal is meant to address exactly this issue.

Since each plant has common coal receiving and handling, water intake and water discharge systems, the proposed transfer amounts are on a plant basis as opposed to individual unit basis. The transfer levels allow a new owner to operate the plant(s) in a manner consistent with historic operating levels and recently imposed emission rate limits and allow Dynegy to maintain a consistent level of flexibility across its remaining MPS units. The amounts are based on a review of the emissions for each unit over the last five years, installed control equipment, and new emission rate restrictions imposed within the past five years. The allocations were rounded values based on the more stringent of historical emissions or new allowable emissions. The ozone season NO<sub>x</sub> transfer amounts represent 40% of the annual NO<sub>x</sub> transfer amount because the ozone season is approximately 40% of the year.

#### **VIII. Conclusion**

I respectfully urge the Board to adopt this proposed amendment to the MPS. As some of the members of this Board will recall, Dynegy, in good faith, stepped forward and negotiated a multi-pollutant approach that it thought would provide resolution to a contentious proceeding.

U.S. EPA and Illinois EPA agree, there will be reductions in future allowable emissions. Dynegy's past performance and commitment to this updated multi-pollutant approach with new emission limits ensures the protection of Illinois' air quality. I will conclude by stating that the amendment is economically reasonable and technically feasible.

I conferred with Dean Ellis, James Ross, and operations reporting personnel, employees of Dynegy, in developing my testimony. Dean Ellis is present with me to answer any questions on my testimony. Thank you for the opportunity to address this Board.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Rick Dierix", written over a horizontal line.

Rick Dierix  
Managing Director, Environmental Compliance  
Dynegy Inc.

**Exhibits to Prefiled Testimony of Rick Diericx**

**Exhibit A**—Testimony of Director of Illinois EPA, Douglas P. Scott, before the U.S. Senate Committee on Environment and Public Works/Subcommittee on Clean Air and Nuclear Safety in 2009

**Exhibit B**—Chart of Baseline SO<sub>2</sub> and NO<sub>x</sub> Emissions

**Exhibit C**—Table of Redundant Regulations

Electronic Filing: Received, Clerk's Office 12/11/2017  
Exhibit A-Testimony of Doug Scott

**Written Testimony of Douglas P. Scott**

**Director, Illinois Environmental Protection Agency**

**Before the:**

**U.S. Senate Committee on Environment and Public Works/**

**Subcommittee on Clean Air and Nuclear Safety**

**On the Issue of:**

**“Oversight: Environmental Protection Agency’s Clean Air Regulations –  
One Year after the CAIR and CAMR Federal Court Decisions”**

**July 9, 2009**

Mr. Chairman and Members of the Committee: My name is Doug Scott and I am the Director of the Illinois Environmental Protection Agency. I want to thank Senator Carper and the other members of the Senate Subcommittee on Clean Air and Nuclear Safety for this opportunity to testify on Illinois’ regulations to control sulfur dioxide, nitrogen oxides and mercury emissions from the State’s coal-fired power plants.

I received a Bachelor’s Degree with honors from the University of Tulsa in 1982, and received a graduate Juris Doctor law degree with honors from Marquette University in 1985. I served as Assistant City Attorney and City Attorney for the City of Rockford, Illinois from 1985 to 1995. I also represented the City on a number of environmental issues. From 1995-2001 I served as an Illinois State Representative for the 67th District and served on the House Energy and Environment Committee, and was a member of the committee that rewrote the States’ electric utility laws. I was elected to the Office of the Mayor of Rockford in April 2001 and served a four-year term and served as President of the Illinois Chapter of the National Brownfields Association. I was appointed as the Director of the Illinois EPA by Governor Rod Blagojevich in July 2005, and have served as Chair of the Air Committee of the Environmental Council of the States (ECOS), the national organization of state environmental agency leaders.

I am pleased to be here to provide testimony on the “three pollutant” approach and Illinois’ experience in reaching agreements with our state’s three largest coal-fired power plant system owners. My testimony will provide background information and a broad overview of the

development of Illinois' multi-pollutant reduction agreements. I will address some of the measures the Illinois EPA took during rule development to ensure that we relied on accurate and current information as we crafted the rule.

### **Illinois Multi-Pollutant Regulatory Approaches**

Illinois is a large industrial state with a population of about 13 million people and a gross state product of \$522 billion. Each of these are approximately four percent of the U. S. total and ranks Illinois as fifth among the nation in these categories. Illinois obtains more than 40 percent of its electricity from coal-fired power plants and sits on top of 38 billion tons of coal, giving it the third largest coal reserves in the nation. Coal-fired power plants in Illinois constitute the largest source of man-made emissions of mercury (Hg) and sulfur dioxide (SO<sub>2</sub>), and one of the largest sources of nitrogen oxides (NO<sub>x</sub>). Illinois is home to 21 large coal-fired plants that operate electric generating units.

Over the last several years in Illinois, exceptional progress has been made in reducing the emissions that contribute to ozone and particulate matter (PM) air pollution, as well as reducing toxic Hg emissions that deposit into and contaminate Illinois' waters and fish. In particular, the Illinois Environmental Protection Agency (Illinois EPA) reached landmark multi-pollutant standard agreements with the three largest coal-fired power plant systems operating in Illinois: Midwest Generation, Ameren and Dynegy. These three companies represent 88% of Illinois' 17,007 megawatts of coal-fired electric generating capacity and account for hundreds of thousands of tons of air emissions each year.

These multi-pollutant standards (MPS) are expected to result in measurable air quality improvements in Illinois and also in regional air quality by dramatically reducing Hg, SO<sub>2</sub>, and NO<sub>x</sub> emissions from Illinois' coal-fired power plants. The agreed-to multi-pollutant standards are one of the most important environmental and public health advances in Illinois in recent decades. They represent the largest reductions in air emissions ever agreed to by individual companies in Illinois under any context, whether through an enforcement action or regulation.

As a result of the knowledge and experience gained through Illinois' efforts, the Illinois EPA supports a comprehensive national strategy for reducing emissions of multiple pollutants from electric generating units. A comprehensive, integrated approach benefits both regulators and the regulated community. Multi-pollutant approaches should supplement, not replace, the existing Clean Air Act programs such as New Source Review (NSR), Maximum Achievable Control Technology (MACT) standards and regional haze, as well as other important statutory requirements for achieving and sustaining clean air.

In meeting emission goals, the regulated community should be afforded flexibility, where appropriate, which may include an emissions trading mechanism for NO<sub>x</sub>, and SO<sub>2</sub>, but not pollutants where local impacts are of great concern or where concentrated emissions at a local scale may occur – as in the case of Hg. Any multi-pollutant strategy must also ensure that regions, states and localities retain their authority to adopt and implement measures which are more stringent than those of the federal government.

A 3-pollutant approach for controlling the emissions of Hg, SO<sub>2</sub>, and NO<sub>x</sub> from coal-fired power plants can have numerous advantages over the traditional, single pollutant schemes. For example, a well crafted multi-pollutant standard can increase the protection of public health and the environment, reduce pollution more cost-effectively, and offer greater certainty to both industry and regulators. Since Hg emission reductions can be obtained as a “co-benefit” from the control devices used to reduce SO<sub>2</sub> and NO<sub>x</sub>, it makes sense to allow companies the option to synchronize the control of these pollutants, provided that public health and the environment are likewise positively impacted. Whereas the federal Clean Air Mercury Rule (CAMR) single-mindedly tackled mercury emissions, and the federal Clean Air Interstate Rule (CAIR) addressed SO<sub>2</sub> and NO<sub>x</sub>, Illinois was able to use a multi-pollutant strategy that accomplishes the aforementioned benefits in a unified regulatory framework accounting for planning, engineering, availability of financing and other issues that accompany a multi-pollutant control strategy.

Illinois believes the most feasible method of obtaining reliable emission reductions in a cost-effective manner is through a combination of emission rate based limits along with emissions trading. Although sources under the MPS are not allowed to utilize allowances to meet the

numeric emissions standards, sources are free to sell or trade allowances that are generated as a result of emissions being below the allowable emission rates. This provides an incentive for companies to go beyond the reductions required under the MPS in order to recover some of the costs associated with the control measures taken. Moreover, emissions' trading is recognized to provide market incentives for sources to control emissions as far and as fast as reasonably possible. Of note is that emissions trading under a cap and trade program has historically resulted in the highest emitting plants making the deepest reductions in emissions – a key finding that strongly supports the inclusion of emissions trading into any control strategy.

### **Illinois Multi-Pollutant Agreements**

The catalyst for Illinois' agreements was the position taken in early 2006 that Illinois would propose an aggressive mercury regulation focused on cutting mercury emissions by 90% from coal-burning power plants by mid-2009. After the Illinois EPA presented its findings in support of the mercury rule during two weeks of well-attended and hotly contested public hearings, the Agency was approached by Ameren who expressed a desire to work with the Agency toward common goals. Subsequent to long hours of negotiation, an alternative standard was proposed that involved allowing some flexibility in complying with the mercury standards in exchange for commitments to also significantly reduce SO<sub>2</sub> and NO<sub>x</sub> emissions from Ameren's coal-fired power plants. This initial agreement led to similar discussions and agreements with Illinois' other two large coal burning systems, Dynegy and Midwest Generation.

The agreements reached and memorialized in the Multi-Pollutant Standard (MPS) and Combined Pollutant Standard (CPS) are significant not only for the magnitude of emissions reductions that occur, but also for the rule support that accompanied the agreements. The Illinois mercury rule was vehemently opposed by a unified coal-fired power industry. The initial agreement established that mutual goals were achievable, set the guiding principles, and opened the door for other companies to follow –which they did. Ultimately, the mercury rule was unanimously approved in 2006 by both the Illinois Pollution Control Board and the Joint Committee on Administrative Rules, the two governing oversight bodies for regulations in Illinois.

Both the MPS and CPS provisions provide some flexibility on the timing of mercury reductions in exchange for commitments to make significant reductions in both SO<sub>2</sub> and NO<sub>x</sub>. All of the provisions include some level of trading restrictions on SO<sub>2</sub> and NO<sub>x</sub> allowances provided under CAIR. Ameren, Dynegy and Midwest Generation will install a multitude of pollution control equipment on their boilers costing several billion dollars, including wet and dry scrubbers, selective catalytic reduction (SCR) and selective non-catalytic reduction (SNCR) devices, and fabric filters. Recent discussions with representatives of Illinois' coal-fired power plants indicate that they are all preparing to meet the requirements of the MPS and CPS, which initiate in 2010. In doing so, a wide array of emissions control equipment costing billions of dollars will come on-line in Illinois over the next several years. Illinois coal-fired power plants have already installed and begun operating numerous halogenated activated carbon injection (ACI) systems for mercury control. The first of many new scrubbers for SO<sub>2</sub> control will begin operation shortly. Fabric filter controls will accompany the installation of many of the scrubbers and result in the co-benefit of particulate matter reductions. Selective catalytic reduction devices and other new NO<sub>x</sub> controls are being scheduled for installation across Illinois. The shutdown of a few of the older, most polluting electric generating units began in December 2007 with two more units scheduled for shutdown by December 2010.

### **Illinois Mercury Rule**

The Illinois mercury rule is designed to achieve a high level of mercury control, based on Illinois EPA's finding that there exists mercury control technology that is both technically feasible and economically reasonable. Mercury emissions may be reduced through the application of control technology specifically designed to control mercury (e.g., activated carbon injection), or through co-benefit from other control technologies designed to control SO<sub>2</sub>, NO<sub>x</sub>, and PM. Depending on several variables, including coal and boiler type, there are a number of control technologies that will achieve 90+% removal of mercury. Mercury emissions control technology is a rapidly advancing field, with halogenated sorbents being an affordable and effective option for most applications. Although there may be some challenges to achieving 90% removal of mercury for



all applications, in almost every case each of these challenges can be overcome or addressed through technology that is economically reasonable and available today.

The Illinois mercury rule provides substantial flexibility in order to reduce the costs of compliance and risk of noncompliance for power plants. This flexibility includes the ability to meet either a 90% reduction or an output based standard of 0.0080 pounds mercury/GWh, phasing in standards over a period of 3 ½ years with a less restrictive standard in phase one, compliance by averaging of emissions, and the avoidance of installing controls on units that will be shutdown in the near future provided companies make an enforceable commitment to shutdown those units by a date certain.

Additional flexibility is provided via a “Temporary Technology Based Standard” (TTBS) that provides relief for units that install appropriate mercury controls but do not achieve full compliance. Eligible units only need to operate the mercury controls in an optimal manner to comply. This provision is available through June 2015 and can be used by up to 25% of a company’s generating capacity.

Companies may choose to voluntarily comply with the MPS or CPS as an alternative to the otherwise applicable requirements of the mercury rule. These provisions provide additional flexibility in regards to mercury control in return for companies achieving significant reductions in the emissions of SO<sub>2</sub> and NO<sub>x</sub>.

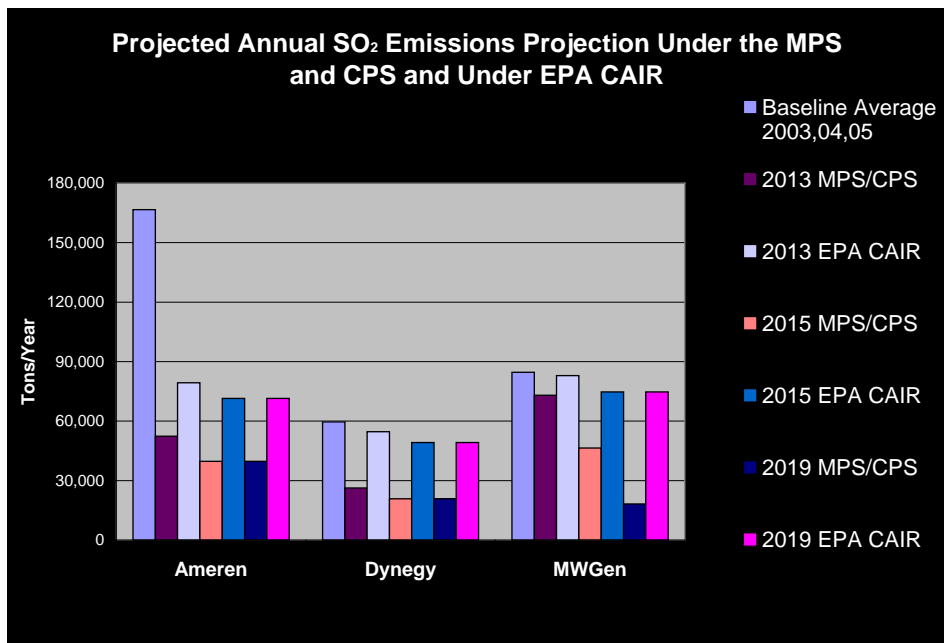
Under the MPS and CPS, companies can commit to voluntarily meet numerical emission standards for both NO<sub>x</sub> and SO<sub>2</sub> and in return are provided additional flexibility in complying with the mercury emission standards. The MPS and CPS provisions also contain restrictions on the trading of NO<sub>x</sub> and SO<sub>2</sub> allowances provided under CAIR. By regulating the emissions of NO<sub>x</sub> and SO<sub>2</sub> and restricting the trading of allowances, the MPS and CPS have obvious implications for the proposed CAIR NO<sub>x</sub> and SO<sub>2</sub> cap and trade program. As modeling has demonstrated, the benefits of these reductions will mostly impact Illinois and a few of the closest neighboring states (i.e., Indiana, Wisconsin and Missouri) with lesser benefits further downwind. While the positive impacts of the reductions are most significant within Illinois and its closest

neighbors, Illinois does support emissions trading as the most cost effective controls will be installed and the timing of controls is likely to occur more quickly than under a command and control option.

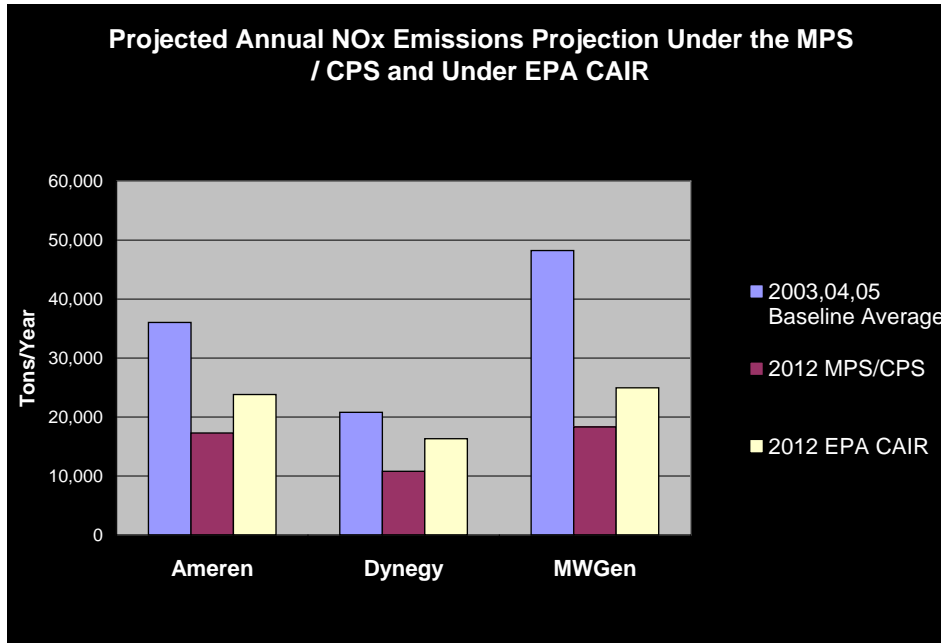
**Emission Reductions**

The combination of the Illinois mercury rule, CAIR, and the MPS and CPS will have enormous positive impacts, reducing mercury, SO<sub>2</sub> and NO<sub>x</sub> emissions far beyond the levels required under the federal CAMR and CAIR alone.

Under CAIR, U.S. EPA estimates that coal-fired power producers in Illinois would only have been required to reduce their SO<sub>2</sub> emissions by 34%, not the estimated 76% for Ameren, 65% for Dynegy, and 80% for Midwest Generation required under the MPS and CPS. The emissions of NO<sub>x</sub> are likewise expected to be reduced beyond the levels obtained by the model CAIR. In addition, both the MPS and CPS contain trading restrictions designed to ensure that the SO<sub>2</sub> and NO<sub>x</sub> reductions occur in Illinois.



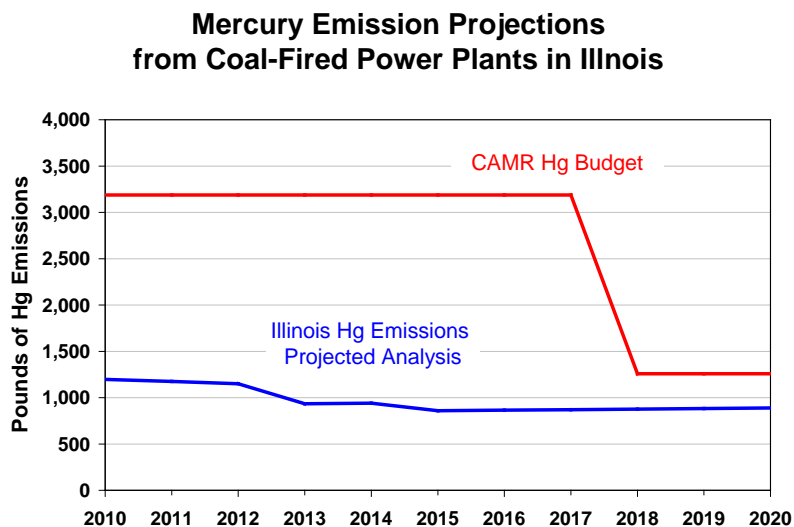
The reductions agreed to under the MPS and CPS for SO<sub>2</sub> and NO<sub>x</sub> are expected to go a long way toward helping Illinois achieve attainment of the ozone and PM standards. The modeling demonstrates that the emission reductions are very substantial.



The Illinois EPA estimates the total emission reductions from all three power companies at:

- SO<sub>2</sub> = 233,600 tons per year eliminated
- NO<sub>x</sub> = 61,434 tons per year eliminated
- Mercury = 7,040 pounds per year eliminated

Under CAMR, coal-fired power producers in Illinois would have only been required to reduce their mercury emissions by 47% in 2010 and 78% by 2018, not the 90% reduction by 2009 specified in the Illinois rule. The timing of mercury reductions for



those sources that opt-in to the MPS or CPS is essentially the same, and the amount of reduction is expected to be close to 90%, although the companies will not be required to comply with the 90% reduction requirement on a 12 month rolling basis until 2015. Sources under the MPS and CPS are expected to have mercury emission reductions that exceed the required 90% after 2015 due to the co-benefit reductions achieved from the installation of controls needed to comply with the corresponding SO<sub>2</sub> and NO<sub>x</sub> standards.

### **Impacts of Emissions Reductions**

Under the agreements between the Illinois EPA and Midwest Generation, Ameren and Dynegy, the decreases in Hg, SO<sub>2</sub>, and NO<sub>x</sub> emissions are estimated to far exceed the reductions required under the federal CAMR and CAIR.

In regards to mercury, over time Illinois expects to see reductions in deposition of Hg to Illinois' lakes and streams and corresponding mercury decreases in Illinois' fish, making those fish caught in Illinois waters safer to eat. There will be several recognized benefits to the State from tighter mercury controls beyond the expected public health benefits that come with a reduction in deposition to Illinois' waters and fish. Such benefits include support for existing jobs and the potential for additional jobs resulting from the installation and operation of additional pollution control devices.

The benefits of removing SO<sub>2</sub> and NO<sub>x</sub> are well established and most notably will result in reductions in both particulate matter and ozone. SO<sub>2</sub> is a precursor to particulate matter and NO<sub>x</sub> is a precursor to both particulate matter and ozone. Particulate matter related annual benefits include fewer premature fatalities, fewer cases of chronic bronchitis, fewer non-fatal heart attacks, fewer hospitalization admissions (for respiratory and cardiovascular disease combined) and should result in fewer days of restricted activity due to respiratory illness and fewer work loss days. Moreover, there should be health improvements for children from reduced upper and lower respiratory illness, acute bronchitis, and asthma attacks.

Ozone health-related benefits are expected to occur during the summer ozone season and include fewer hospital admissions for respiratory illnesses, fewer emergency room admissions for asthma, fewer days with restricted activity levels, and fewer days where children are absent from school due to illnesses. In addition, there should be ecological and welfare benefits. Such benefits include visibility improvements; reductions in acidification in lakes, streams, and forests; reduced nutrient replenishing in water bodies; and benefits from reduced ozone levels for forests and agricultural production.

**CAMR and CAIR Vacatur Impact on Illinois Regulations:**

On February 8, 2008, the United States Court of Appeals for the District of Columbia Circuit vacated the federal CAMR. The Illinois mercury rule is separate from the federal CAMR and therefore the vacatur of CAMR had minimal impact on the Illinois rule. However, this court action raised concerns regarding the status of certain federal provisions dealing with the monitoring of mercury emissions. Given the uncertainty surrounding federal mercury monitoring provisions, the Illinois EPA determined that a revision to the Illinois mercury rule was appropriate. The revisions focused on the methods used to measure or monitor mercury emissions, and did not include any revisions to the control standards themselves. The rule was amended to allow a source to demonstrate compliance for a three year period using stack testing. The Illinois mercury rule remains in full effect and all Illinois companies began complying with the rule on July 1<sup>st</sup> of this year.

In July of 2008, the U.S. Court of Appeals for the District of Columbia Circuit (DC Court of Appeals) vacated the CAIR rule in its entirety. After entertaining motions for reconsideration from the parties, on December 23, 2008, the same court issued an opinion stating that the federal CAIR was remanded to U.S. EPA without vacatur. U.S. EPA subsequently confirmed that it has begun implementation of CAIR starting January 1, 2009. Illinois CAIR is in full effect. For a number of reasons, the vacatur and reinstatement of Phase I of CAIR have had minimal impact on Illinois sources and the MPS and CPS remain in effect. However, for the reasons discussed below, Illinois strongly favors federal multi-pollutant legislation to “remedy” the flaws in CAMR and CAIR.

The decision of the DC Court of Appeals vacating CAIR in part, i.e., vacating Phase II of CAIR but reinstating Phase I of CAIR, has thus far had minimal impact on Illinois. CAIR Phase I required reductions up until the beginning of CAIR Phase II in January 1, 2015. Although Illinois relied upon CAIR Phase I as part of our 8-hour ozone (85 ppb) and annual PM<sub>2.5</sub> attainment plans, air quality in Illinois' two 8-hour ozone (85 ppb) and annual fine particulate matter nonattainment areas has improved to a very significant degree without these expected reductions. As a result, all but one monitor is in attainment for these standards, and it is expected to be in attainment in 2012. Because the MPS and CPS result in significant reductions before 2015, Illinois is not dependent on CAIR Phase II reductions for the newest 8-hour standard (75 ppb) or the newest daily fine particulate matter standards, and for which attainment plans are not yet due. Despite the improvement in air quality, Illinois would have much more significant problems in demonstrating attainment in its state implementation plan if CAIR Phase I was not reinstated.

There is some concern that Illinois coal-fired power plants may delay or cancel some controls that were being installed to comply with CAIR Phase I due to the loss of value in SO<sub>2</sub> and NO<sub>x</sub> allowances. The market value of these allowances is uncertain, because there is controversy over whether the DC Court of Appeal's opinion has disallowed an emissions trading program. As a result, companies have no incentive to go beyond the reductions required by CAIR Phase I because the incentive to install controls early due to the cost recovery benefit of the allowances obtained is removed. Also, many companies have a significant number of banked allowances available for their use or for sale, and these banked allowances will be depleted rather than companies meeting the "emissions cap" through installation and operation of pollution control equipment, perhaps even to the extent of not operating existing or recently installed controls. However, we believe the MPS and CPS should keep Illinois sources on track for installation and operation of the planned control devices and reductions.

After the vacatur of CAIR, the Northeast and Midwest states began a process, called the "State Collaborative Process", the stated intent of which was to develop a multi-pollutant strategy to achieve levels of NO<sub>x</sub> and SO<sub>2</sub> reductions from the electric utility sector in the 28-state CAIR

region as expeditiously as possible that would remedy CAIR's flaws in accordance with the Court's July 11, 2008 opinion and satisfy the requirements of the Clean Air Act to attain the 1997 national ambient air quality standards (NAAQS) for ozone and PM. While significant progress was made in developing a framework for a CAIR replacement rule, no final recommendation to USEPA has yet been developed. The participating states disagree over the level of reductions that should be required, whether best available controls should be required on every power plant or just the larger/largest units, the timing of controls, whether emissions trading (or even intra-state emissions averaging) is allowable under the Court's decision, and whether a replacement rule can forestall Section 126 petitions under the Clean Air Act.

It is Illinois' experience that emissions trading will result in the greatest amount of reductions at the lowest cost. More importantly, emission trading will encourage companies to install controls earlier, and go beyond required reduction levels, as compared to a command and control strategy. Under a command and control strategy, the regulatory compliance deadline must be set such that there is 100% assurance that every affected source will be able to comply in consideration of the time necessary for planning, engineering and construction deadlines. In other words, there must be sufficient availability of engineering firms, control equipment and construction companies to plan, engineer, build and install all of the pollution control equipment required for compliance. Such a regulatory compliance date would certainly be difficult to establish and likely result in far fewer reductions in the near term when compared to an approach that includes emissions trading. Also, the construction season in many of the affected CAIR states is limited to a 7 to 8 month window, when electric demand is at its highest, further complicating this approach.

In addition to regulatory compliance deadlines, sources (and the states) must be concerned with power outages. In Illinois' opinion and experience in negotiating the MPS and CPS, within the CAIR region, it is not practical (and may not be possible) to retrofit all coal-fired power plants of any significant size (e.g., 25 MWe or more) in the same 3-year window (or even 5-year window). A command and control strategy necessarily sets a date certain for compliance for each affected and similarly situated source. Emissions trading will allow those time frames to be compressed, as source by source compliance is not required.

As Illinois discovered during its MPS and CPS negotiations, there are very significant costs associated with installing pollution controls of the magnitude negotiated under Illinois' rules – estimated in excess of 3 billion dollars. While this cost may seem small on a kilowatt hour basis, these companies must obtain a rate increase if they are in a regulated state or financing if they are in a deregulated state like Illinois. The ability to obtain a rate increase or financing for these projects is uncertain and takes time, which must be accounted for in a compliance date for any command and control strategy. Emissions trading will allow those time frames to be compressed as well, as source by source compliance is not required.

The vacatur of both CAMR and CAIR emphasizes the high risk associated with moving forward with federal regulations subject to widespread opposition and controversy. Federal regulations will almost certainly be challenged, potentially resulting in further delay of a vital strategy for the states to achieve attainment of the federal air quality standards. Section 126 petitions will surely also be filed by any state that believes its neighbor and upwind states could do more to address nonattainment, even if the complaining state's air quality issues are largely a result of emissions from its own sources (area, mobile and point) and even if the targeted other state(s) has done more to address emissions from its coal-fired power plants than the complaining state. Section 126 petitions will use precious resources that are needed to address the newest recent daily PM<sub>2.5</sub> standard, the revised 8-hour standard (75 ppb), the newest lead standard, and the recently-announced, revised NO<sub>2</sub> standard. Federal multi-pollutant legislation represents the best option for addressing the points of disagreement among the states, without being bound by interpretations of the scope and flexibility provided under the 1990 Clean Air Act amendments, and in a way that best serves the goal of obtaining the greatest reductions in SO<sub>2</sub>, NO<sub>x</sub> and Hg, in the shortest possible time frame, while taking into account electric costs and reliability.

In conclusion, the multi-pollutant approach taken in Illinois for controlling the emissions of Hg, SO<sub>2</sub>, and NO<sub>x</sub> from coal-fired power plants has numerous advantages. Whereas the federal CAMR focuses solely on mercury emissions, and CAIR concentrates on SO<sub>2</sub> and NO<sub>x</sub>, Illinois' has taken a combined approach that exceeds the goals in the context of a single regulatory framework, accommodating engineering and construction issues and outage schedules, as well as



financing issues. The result has been a tremendous win-win-win for the environment, public health and the regulated community.

**Multi-Pollutant Standard & Combined Pollutant Standard – Required Emissions Rates and % Reductions**

	<b>CAIR in IL</b> <sup>1</sup>	<b>CAIR in IL</b> <sup>1</sup>	<b>Midwest Generation</b>		<b>Ameren</b>		<b>Dynegy</b>	
	Emission Rate (lbs/mmbtu)	% Reduction	Emission Rate (lbs/mmbtu)	% Reduction	Emission Rate (lbs/mmbtu)	% Reduction	Emission Rate (lbs/mmbtu)	% Reduction
<b>SO<sub>2</sub></b>								
2010					0.50	52%		
2013	0.50	31%	0.44	13.7%			0.24	56%
2014			0.41	19.6%	0.43	56%		
2015	0.45	34%	0.28	45.1%	0.25	76%	0.19	65%
2016			0.195	61.8%				
2017			0.15	70.6%	0.23	78%		
2018			0.13	74.5%				
2019	0.45	34%	0.11	78.4% <sup>2</sup>	0.23	78%	0.19	65%
<b>NO<sub>x</sub></b>								
Annual – 2012	0.15	44%	0.11	62% <sup>3</sup>	0.11	52%	0.10	48%
Annual - 2015	0.12	55%	0.11	62% <sup>3</sup>	0.11	52%	0.10	48%
Seasonal - 2012	-	-	0.11	51%	0.11	22%	0.10	25%

<sup>1</sup>CAIR emission rate numbers from page 5 of the June 28, 2005 USEPA presentation to LADCO

([http://www.ladco.org/reports/rpo/Regional%20Air%20Quality/June28\\_2005/June-Workshop/CAIR%20LADCO%20.pdf](http://www.ladco.org/reports/rpo/Regional%20Air%20Quality/June28_2005/June-Workshop/CAIR%20LADCO%20.pdf)).

Percent reductions from the USEPA website that provides CAIR reductions expected in Illinois (<http://www.epa.gov/cair/il.html>).

Emissions used for calculations are from Clean Air Markets Divisions of USEPA.

<sup>2</sup>80% including planned shutdowns.

<sup>3</sup>68% including planned shutdowns.

Note: Ameren SO<sub>2</sub> rates reflect changes to allowable rates as contained in proposed revision to Illinois mercury rule.

**Percent Mercury Reductions from CAMR, Illinois Combined Pollutant Standard (CPS) and Multi-Pollutant Standard (MPS)**

<b>Beginning Period</b>	<b>CAMR</b>	<b>Midwest Gen - CPS</b>	<b>Dynegy - MPS</b>	<b>Ameren - MPS</b>
Mid 2008		21%		
Mid 2009		84% (ACI installed on most units)	(ACI installed on most units)	(ACI installed on most units)
2010	47%		86%	86%
2011		90% (ACI on all units)		
2013 <sup>1</sup>		90%	90%	90%
2015 <sup>2</sup>		>90%	94.4%	93.5%
2018	78%	95%		

<sup>1</sup>All units have controls installed that are designed to achieve 90% reduction in mercury emissions.

<sup>2</sup>Several units at plant have combination of Scrubber, Baghouse, SCR and/or ACI and many units will achieve greater than 90% reduction in mercury emissions.

All numbers are Illinois EPA estimates.

## SO<sub>2</sub> and NO<sub>x</sub> Emission Rates for Coal-fired EGUs

Seasonal NOx	2003-2005	lbs/mmBTU			Tons			mmBTU		
owner	Average Rate	2003	2004	2005	2003	2004	2005	2003	2004	2005
Ameren	0.149	0.167	0.138	0.144	11348.284	7791.478	10255.427	136152746	113176421	142344008
CWLP	0.164	0.222	0.115	0.154	1355.08	580.896	1041.612	12225081	10138395	13489774
Dominion	0.111	0.190	0.079	0.064	2760.143	1082.797	992.836	29099932	27392932	31145861
Dynegy	0.133	0.209	0.102	0.087	9704.498	3824.022	4359.787	92894369	74935571	99783984
MidwestGen	0.225	0.226	0.220	0.229	15238.454	13447.783	15859.257	134653036	122176854	138766375
Southern	0.119	0.203	0.072	0.081	850.153	332.541	503.919	8375630	9249092	12390887

Annual NOx	2003-2005	lbs/mmBTU			Tons			mmBTU		
owner	Average Rate	2003	2004	2005	2003	2004	2005	2003	2004	2005
Ameren	0.227	0.245	0.226	0.210	38047.318	37591.097	32465.564	310067241	332518328	309879765
CWLP	0.492	0.494	0.481	0.501	6549.623	6919.958	7810.256	26530153	28766018	31174394
Dominion	0.478	0.545	0.473	0.415	20317.221	19387.329	14304.494	74520126	81905087	68897289
Dynegy	0.191	0.261	0.215	0.096	28455.354	23280.526	10639.399	218427022	216363263	221703763
MidwestGen	0.290	0.276	0.274	0.320	43140.813	46619.149	54926.927	312584728	340580465	343230846
Southern	0.447	0.560	0.452	0.329	5542.394	6098.728	4474.124	19798355	26973552	27176404

Annual SO <sub>2</sub>	2003-2005	lbs/mmBTU			Tons			mmBTU		
owner	Average Rate	2003	2004	2005	2003	2004	2005	2003	2004	2005
Ameren	1.050	1.158	1.026	0.966	179552.58	170631.1	149729.62	310067241	332518328	309879765
CWLP	0.757	0.861	0.689	0.722	11415.076	9908.113	11252.094	26530153	28766018	31174394
Dominion	0.519	0.514	0.536	0.506	19143.531	21967.971	17446.447	74520126	81905087	68897289
Dynegy	0.545	0.583	0.562	0.491	63621.55	60806.02	54393.585	218427022	216363263	221703763
MidwestGen	0.510	0.510	0.517	0.502	79689.881	88081.717	86138.585	312584728	340580465	343230846
Southern	0.656	0.737	0.701	0.531	7294.143	9451.715	7210.062	19798355	26973552	27176404

**EXHIBIT C—Table of Redundant Regulations**

**Applicable NOx and SO<sub>2</sub>** -

Plant	SO <sub>2</sub> Requirements							NO <sub>x</sub> Requirements					
	Acid Rain	CSAPR	MPS	Consent Decree	MOA	35 IAC Part 214	Permit Limits	Acid Rain	CSAPR	MPS	Consent Decrees	35 IAC Part 217	Permit Limits
Baldwin	X	X	X	X		X	X	X	X	X	X	X	X
Havana	X	X	X	X		X	X	X	X	X	X	X	X
Hennepin	X	X	X	X		X	X	X	X	X	X	X	X
Coffeen	X	X	X			X	X	X	X	X		X	X
Duck Creek	X	X	X			X	X	X	X	X		X	X
Edwards	X	X	X		X	X	X	X	X	X		X	X
Joppa	X	X	X			X	X	X	X	X		X	X
Newton	X	X	X			X	X	X	X	X		X	X

Electronic Filing: Received, Clerk's Office 12/11/2017

Sulfur Dioxide Regulations										
			Plant							
Rule	Averaging Time	Unit of Measurement	Baldwin	Havana	Hennepin	Coffeen	Duck Creek	Edwards	Joppa	Newton
MPS	Annual	Pounds per million Btu of Heat Input (Lbs/mmbtu)	X	X	X	X	X	X	X	X
Acid Rain	Annual	Allowances (tons)	X	X	X	X	X	X	X	X
CSAPR	Annual	Allowances (tons)	X	X	X	X	X	X	X	X
Consent Decree	30-day Rolling	Lbs/mmbtu	X	X	X					
Consent Decree	Annual	Tons	X	X	X					
New Source Performance Standards	3-Hours	Lbs/mmbtu		X			X			X
Memorandum of Agreement	1-hour	Pounds per Hour (Lbs/hr)						X		
IL SIP	1-hour	Lbs/hr	X		X	X			X	
IL SIP		Lbs/mmbtu		X			X	X		X

Nitrogen Oxide Regulations										
			Plant							
Rule	Averaging Time	Unit of Measurement	Baldwin	Havana	Hennepin	Coffeen	Duck Creek	Edwards	Joppa	Newton
MPS	Annual	Lbs/mmbtu	X	X	X	X	X	X	X	X
Acid Rain	Annual	Allowances (tons)	X	X	X	X	X	X	X	X
CSAPR	Annual	Allowances (tons)	X	X	X	X	X	X	X	X
Consent Decree	30-day Rolling	Lbs/mmbtu	X	X						
Consent Decree	Annual	Tons	X	X	X					
New Source Performance Standards	3-Hours	Lbs/mmbtu		X			X			X
IL SIP	1-hour	Lbs/hr	X		X	X			X	
IL SIP		Lbs/mmbtu		X			X	X		X

**BEFORE THE ILLINOIS POLLUTION CONTROL BOARD**

**In the Matter of:** )  
 )  
**AMENDMENTS TO** ) **R18-20**  
**35 ILL. ADM. CODE 225.233,** ) **(Rulemaking – Air)**  
**MULTI-POLLUTANT STANDARDS (MPS)** )

**PREFILED TESTIMONY OF DEAN ELLIS**

**I. Introduction**

My name is Dean Ellis, and I am presenting testimony on behalf of Dynegy Midwest Generation, LLC, Illinois Power Generating Company, Illinois Power Generating, LLC and Electric Energy, Inc. (collectively, “Dynegy”) in support of the Illinois EPA’s Multi-Pollutant Standard (“MPS”) Amendments rulemaking proposal. I am the Executive Vice President for Regulatory and Government Affairs for Dynegy Inc. In this capacity, I am responsible for government affairs, environmental policy, wholesale and retail markets policy, and internal and external communications. I have been employed with Dynegy since 2009 in a variety of roles and responsibilities across the country. Prior to joining Dynegy, I worked in engineering, operations and construction roles in the electric power industry. I hold a B.S. in electric power engineering from Rensselaer Polytechnic Institute and I am a licensed electrical engineer.

My testimony addresses, the nature of Dynegy’s presence in Illinois, Dynegy’s commitment to protecting human health and the environment and working cooperatively with Illinois EPA, the market and regulatory changes since the promulgation of the MPS that support the need for Illinois EPA’s proposal, Dynegy’s outreach to Illinois EPA regarding the proposal, and the potential economic impacts of further Downstate Illinois plant retirements should the proposal not be adopted. My testimony is complementary to other testimony provided by Dynegy and is not meant to address all of the merits to revising the current MPS rule. Overall, my

testimony demonstrates that the proposal allows Dynegy to make economically rational decisions on how to run its plants while complying with the MPS, which will help to ensure the viability of the entire Illinois fleet given the uncertain economic and regulatory landscape the plants currently face. In presenting this testimony, I am speaking on behalf of Dynegy.

Dynegy is the largest owner and operator of electric generating plants, in terms of megawatts (MW) of generating capacity, in Downstate Illinois, meaning in general, south of Interstate 80. Dynegy owns a total of eleven (11) generating plants in Illinois. Nine (9) of those generating plants are located in Downstate Illinois and the remaining two plants are in central/northern Illinois.<sup>1</sup> Dynegy is also the largest retail electric supplier in Downstate Illinois, with customers in over 450 communities and some 80 Illinois counties. Dynegy currently serves about 830,000 retail customers in Illinois. Dynegy employs a total of 1,300 people in Illinois, has an annual Illinois payroll of about \$135 million, and pays about \$39 million per year in State taxes and \$22 million in local property taxes. Dynegy's annual economic impact to the State of Illinois is over \$2 Billion in direct and indirect benefits, reaching 80 of Illinois' 102 counties.

Dynegy (and the predecessor owners of the generating plants in Dynegy's Illinois fleet) has a long history of being proactive in maintaining its generating assets and reducing emissions. The SO<sub>2</sub> and NO<sub>x</sub> emission performance of the units (as depicted below) subject to the MPS (35 Ill. Adm. Code 225.233) shows a very pronounced improvement (*i.e.*, reduction in these emissions) since 1990. During the late-1990s/early 2000s significant measures were taken to reduce SO<sub>2</sub>, such as switching to low-sulfur coal, and another significant drop in SO<sub>2</sub> emissions occurred after the MPS was enacted in 2007. As depicted in the charts below, SO<sub>2</sub> emissions have been reduced

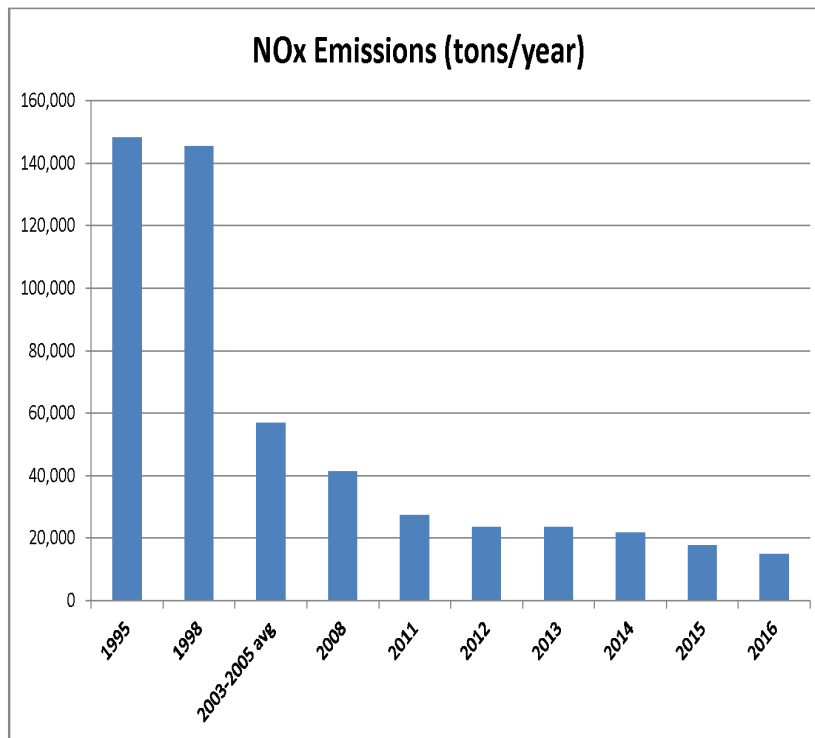
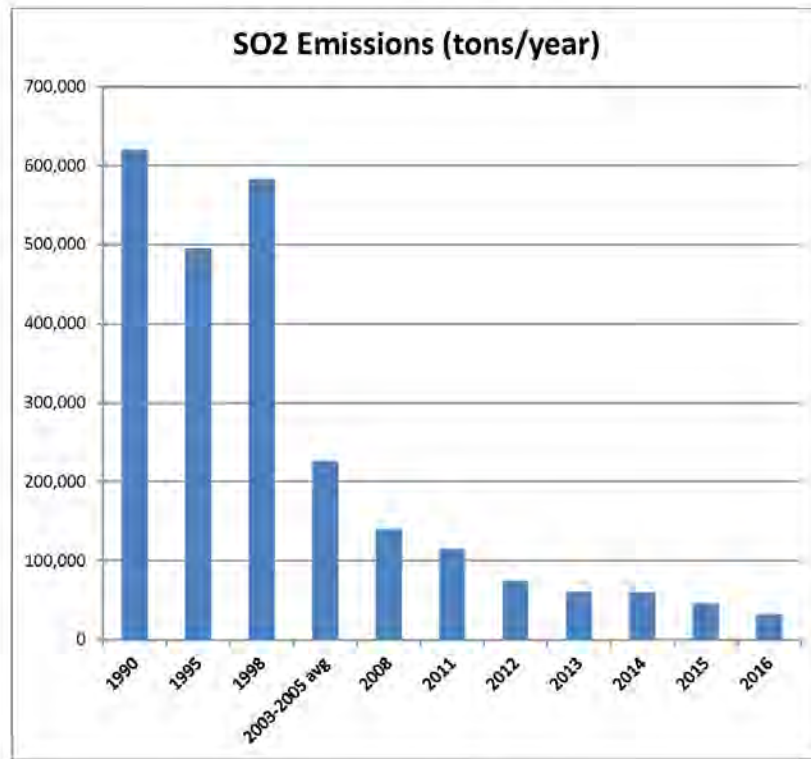
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<sup>1</sup> The plants subject to the MPS are Hennepin, E.D. Edwards, Duck Creek, Havana, Coffeen, Newton, Baldwin, and Joppa.



by 95% since 1990 and 86% since the MPS baseline years of 2003-2005. Similar reductions have been achieved with NOx emissions.

**Pollutant Reductions Before and During the MPS**



## **II. Dynegy Has a History of Working Cooperatively with IEPA**

Dynegy is committed to ensuring that the public health and the environment are protected while providing reliable energy to electricity consumers in Illinois. Dynegy recognizes that it has an obligation to work with Illinois EPA to ensure that the air quality objectives established by applicable statutes and regulations are met. As such, Dynegy (and the predecessor owners of plants in the Illinois fleet) has entered into a number of agreements wherein it has voluntarily agreed to reduce emissions. For example:

- In 2006 as part of the original MPS rulemaking, Dynegy worked closely with the Illinois EPA to promulgate new SO<sub>2</sub> and NO<sub>x</sub> emission standards that went beyond anything required by the Clean Air Act at that time and voluntarily opted into the MPS.
- In 2009, the Kincaid plant voluntarily entered into a Memorandum of Understanding with the Illinois EPA wherein it agreed to limits on NO<sub>x</sub> and SO<sub>2</sub> emissions; this agreement assisted the Agency in meeting its Regional Haze requirements. Since acquiring the Kincaid plant in April 2015 Dynegy has continued to abide by this agreement.
- In 2013 Dynegy and the Illinois EPA entered into a Memorandum of Agreement wherein Dynegy agreed, voluntarily, to assist the Agency in meeting its air quality goals. Under this agreement, Dynegy agreed to permanently retire Unit 1 at the Edwards Energy Center in Peoria and to take additional emission reduction measures.
- In 2015 Dynegy and the Illinois EPA entered into a Memorandum of Agreement wherein Dynegy agreed to further reduce SO<sub>2</sub> emissions at the Edwards Energy Center. These measures assisted the Agency in ensuring attainment of the National Ambient Air Quality Standards (“NAAQS”).

Furthermore, approximately \$2 billion has been invested in Dynegy’s Illinois plants in the past 10 years for emissions controls and environmental upgrades. Dynegy spent over \$1 billion in environmental capital expenditures at the Baldwin, Havana, Hennepin, Vermilion, and Wood River Energy Centers. That includes over \$742 million on SO<sub>2</sub> emission reduction technology, \$15 million on NO<sub>x</sub> emission reduction technology, and \$107 million on particulate controls. Dynegy spent nearly \$11.5 million on mercury controls. Also, over \$1 billion was spent on environmental improvements at the Coffeen, Duck Creek, Edwards and Newton Energy Centers

in the past 10 years. That includes installation of SO<sub>2</sub> scrubbers on three units at a cost of over \$813 million, installation of SCR systems to reduce NO<sub>x</sub> emissions at three plants at a cost of over \$177 million, and installation of activated carbon injection (“ACI”) technology on 12 units at a cost of over \$20 million. A review of O&M expenditures over the past two years shows Dynegy spends between \$25 and \$30 million per year to operate these emission controls.

### **III. Market and Regulatory Changes Since the MPS was Promulgated**

Since the MPS was promulgated there have been numerous changes in market conditions and in the regulatory landscape that significantly affect the operation of the units subject to the MPS. As a result, Dynegy approached the Illinois EPA to discuss potential changes to the MPS. The changes in the market and regulatory landscape are discussed below.

Competitive electricity prices and adequate supplies of competitive electricity have been a positive for Illinois in the continuing effort to attract new business, industry, investment and jobs and to retain existing businesses. However, this competitive edge is threatened in Downstate Illinois. The electric capacity market mechanisms for Downstate Illinois are operated by the Midcontinent Independent System Operator (“MISO”), which is the electric grid operator covering Downstate Illinois and the plants that are subject to the MPS. The plants subject to the MPS are located in the local resource zone or load zone of MISO known as MISO Zone 4. Since the promulgation of the MPS, which became part of the Mercury Rule,<sup>2</sup> the capacity prices established in MISO’s capacity auctions (*i.e.*, the amount MISO pays generators for their plants to be available during the delivery year covered by the MISO capacity auction) for the Downstate region have been volatile and, recently, too low to support much of the existing generation. In the past three

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<sup>2</sup> *In the matter of: Proposed New 35 Ill. Adm. Code 225 Control of Emissions from Large Combustion Sources (Mercury)*, R06-25 (eff. Jan 5, 2007).

years, the annual MISO capacity market auctions for Downstate Illinois have produced prices ranging from \$150 per MW-Day, to \$72, to \$1.50 per MW-Day. The flawed MISO capacity construct allows out-of-state utilities (which recover their costs of their generation fleet through cost-of-service-based rates set by regulatory commissions and charged to captive ratepayers) to undercut competitive Downstate Illinois generators in the MISO capacity auctions for Zone 4, by bidding in the utilities' short-term excess capacity at low prices, but with no long-term obligation to commit their capacity to serve customers in Illinois. In fact, in late 2016, the Illinois General Assembly found it necessary to enact legislation to provide a substantial ratepayer subsidy to the Clinton Nuclear Plant, located in MISO Zone 4, in order to prevent that plant from closing.

Although the flawed MISO Zone 4 capacity market mechanism and the low and unstable capacity prices it has produced presents a significant challenge to the economic viability of Dynege's Downstate generation fleet, changing conditions in the market for energy (as contrasted to capacity) are also presenting challenges to the economic viability of the fleet. The energy market operates, on a near-real-time basis, as follows. In an electric system, within a balancing area or similar region, the amount of electricity generated at a point in time (less transmission and distribution losses) will exactly equal the amount consumed. The electric system operator (MISO), not Dynege (or other generators), is the entity responsible for keeping the supply and demand in balance. To keep the system in balance, the system operator will instruct numerous generators to increase or decrease their output over time, in accordance with the demand for electricity. Generally, the system operator will first instruct, or "dispatch," the units that bid into the system at the lowest cost— referred to as their offer prices. Rather than just tell generators to start and stop, the system operator essentially holds an auction to set prices for each five minute interval. Every generator participating submits an offer price at which it would be willing to sell electricity, and

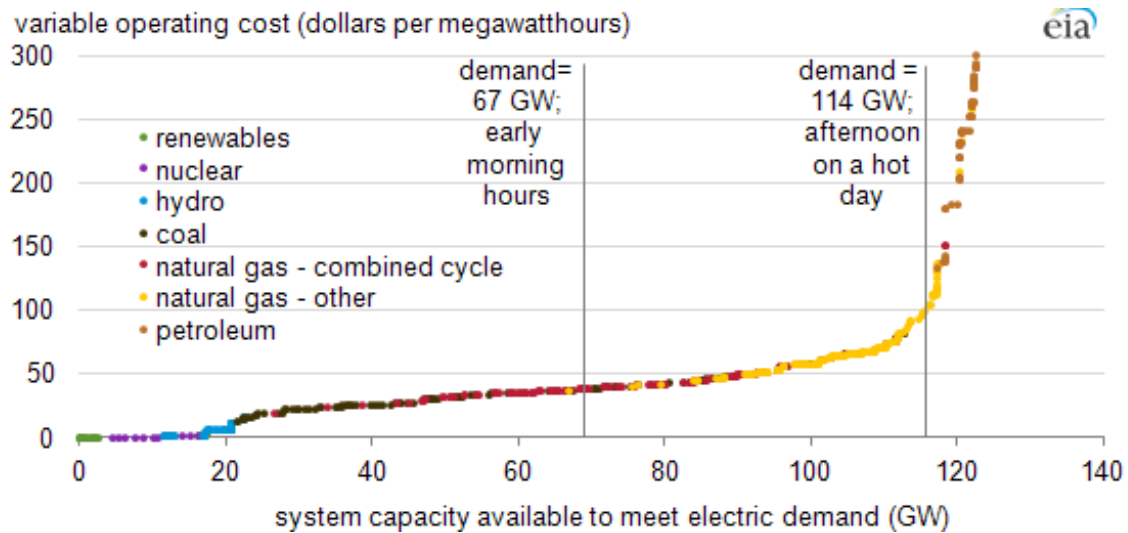
the system operator selects the price (referred to as the market price or clearing price) that will provide the right amount of supply. That is, the system operator accepts generators' offer prices, starting with the lowest offer price and ascending up the ladder of price offers, until the system operator has secured sufficient energy from generators to meet the anticipated customer demand for the relevant time interval. Thus, the system operator dispatches the generating units based on price. Further, all of the generators selected (dispatched) by the system operator receive the clearing price for the energy they deliver in the market, even if their offer price was lower than the clearing price.

Fuel costs typically drive the offer prices submitted by a generator, and therefore its dispatch, and, ultimately, its utilization. In addition to fuel costs, there can be other variable costs of operation (such as operation of emission controls), although in most cases those are much smaller than fuel costs. The dispatch of some units may be complicated by other factors. For example, wind generators only run when the wind blows. Nuclear plants, which have low incremental fuel costs, can have difficulties in rapidly changing output levels, and are not asked to deviate from their full output production level. Hydroelectric facilities with water stored behind dams may not have any fuel costs, but the water is limited in quantity so the system operator will attempt to call on that generation when it is of most value to the system. These other factors can be important in determining which units are dispatched and when by the system operator, but for purposes of my testimony, simplifying the discussion to look predominantly at fuel costs is helpful to understanding the broad market issues Dynegy's Illinois fleet faces.

The curve presented below is a generic, illustrative dispatch curve produced by the U.S. Department of Energy, showing the relationship between varying levels of customer demand for electricity, or "load", and the dispatch of various types of generators to meet the load. It is not

based on actual conditions for any particular system, but is useful for discussing these concepts generally.

### Hypothetical Dispatch Curve<sup>3</sup>



The different colors in the curve are associated with different sources of supply. Renewable resources, such as wind and solar, may have zero marginal costs of generation. Nuclear and hydroelectric facilities may also have extremely low marginal costs as well. Coal historically is the next most economical source of electricity, followed by natural gas and then petroleum.

However, with the advent of substantial gas production from shale deposits, and the resultant significant increases in availability and decreases in price of domestic natural gas supplies, natural gas-fired generation is beginning to displace coal-fired generation, because the decreasing fuel costs of natural gas-fired generation enable these plants to be bid into the energy markets at lower prices. The increase in wind generation (and to a lesser extent solar generation)

<sup>3</sup> “Electric generator dispatch depends on system demand and the relative cost of operation,” *U.S. Energy Information Administration*, last modified August 17, 2012, <http://www.eia.gov/todayinenergy/detail.cfm?id=7590>. The dispatch curve above is for a hypothetical collection of generators and does not represent an actual electric power system or model results.

has also significantly affected the economics of the energy markets, because wind generators have zero marginal fuel costs and therefore (when they are available based on wind conditions) can bid into the energy markets at low or even zero prices. In fact, because wind generators receive a federal production tax credit for each MWh generated, they can have an incentive to actually bid into the energy markets at negative prices.

One additional factor impacting the energy market in MISO Zone 4, to the detriment of the MPS units, is the zero emission credit (“ZEC”) subsidy program adopted for the Clinton Nuclear plant in the Future Energy Jobs Act (Illinois Public Act 99-0906). While the Illinois General Assembly decided that enactment of the ZEC program was necessary in order to keep the Clinton plant from closing as announced by its owner, and thereby to preserve the direct and indirect jobs, regional economic activity, and local tax base and support it provides, the ZEC subsidies have been detrimental to the position of the Dynegy generating plants subject to the MPS. Specifically, receipt of the ZEC subsidy enables the Clinton plant to be bid into the MISO energy market at lower offer prices, with the result that it can displace generating units subject to the MPS that could otherwise be selected by the system operator based solely on incremental fuel and operating costs.

Reflecting the above factors, energy prices in the Downstate region (MISO Zone 4) have declined approximately 50%, from roughly approximately \$60 per megawatt hour in 2006-2007 to approximately \$30 per megawatt hour currently. The steep decline in energy prices coupled with the rate-based emission limits under the current MPS has caused Dynegy to bid and operate some units into the energy market at prices below their costs solely to ensure that these units are selected and utilized so that the overall fleet emissions rate stays below the MPS limit. This has resulted in these units operating at a level higher than they would operate if dispatched solely based on economics, and at a loss to Dynegy. That is, to ensure compliance with the MPS emissions rate



limit, Dynegy has bid units into the MISO energy market at offer prices below the units' costs, thereby incurring a loss in operating these units.

For example, over the last several years Dynegy has run lower-emitting but higher-cost units at the Coffeen and Duck Creek energy centers at a loss in order to maintain the former Ameren MPS Group SO<sub>2</sub> rate of 0.23. That situation is expected to continue if the MPS remains an emissions-rate-based rule. That is, to ensure the former Ameren MPS Group complies with the 0.23 SO<sub>2</sub> emission rate limit, these plants have been offered into the market at prices that are not sufficient to recover fuel and operating cost, solely to ensure that they are selected (dispatched) by the system operator to operate, so that the system average emission rate of the former Ameren MPS Group can be maintained below the MPS limit. In other words, in order for Dynegy to operate it must bid into MISO higher-cost, lower emitting units along with the lower-cost, higher emitting units. This situation results in Dynegy's fleet operating on a negative cash flow basis, that is, revenues received are less than the fuel and other operating costs incurred to operate the unit. In contrast, the proposal to modify the MPS to provide for emissions caps rather than an emission rate limit would allow Dynegy's units to be bid and dispatched based on economic principles.

#### **IV. Dynegy's Outreach to the Illinois EPA**

In response to the economic problems created by the flawed capacity market in MISO and conditions in the energy market, and following the transaction with Ameren in 2013 in which Dynegy acquired a number of generating plants in Downstate Illinois, including the plants in the former Ameren MPS Group, Dynegy approached the Illinois EPA to discuss potential changes to the MPS. Dynegy was not interested in changes to the MPS as a comprehensive solution to the

problems associated with the MISO capacity market, but as a complementary step.<sup>4</sup> Illinois EPA then developed the proposal currently before the Board. In addition to addressing the two changes sought by Dynegy (combing the two MPS Groups and setting mass based emission limits), Illinois EPA also included in its proposal a number of additional requirements Dynegy must meet that are above and beyond the existing MPS and beyond the changes Dynegy requested.

Because the rulemaking process before the Board ensures that all interested parties are provided an opportunity to provide input to the promulgation of new or revised regulations, it was typical for Dynegy (as a stakeholder) to work with the Agency in the first instance to develop the proposal before it was presented to the Board. Furthermore, because the Governor's Executive Order 2016-13 (Oct. 17, 2016) directed the Agency to review all of its rules, Dynegy believed the timing was both appropriate and necessary to approach the Agency concerning potential changes to the original MPS Rule.

#### **V. Economic Impacts of Further Retirements of Dynegy Downstate Generating Units**

If the proposal is not adopted, Dynegy anticipates having to retire additional plants in its Downstate fleet. Dynegy has retired approximately 20% of its Downstate electric generation

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<sup>4</sup> Dynegy is also pursuing enactment of Illinois Senate Bill 2250 and identical House Bill 4141. This legislation has been developed, in part, in response to MISO's request to the Governor and the legislative leaders that Illinois should develop an Illinois-specific capacity market mechanism for Downstate Illinois that addresses the unique (within the MISO footprint) characteristics of electric industry structure and markets in Zone 4. This legislation will address the long-term (and, potentially, near-term) resource adequacy gap in Downstate Illinois identified by MISO and others and the flaws in the current MISO capacity market mechanism for Downstate. The legislation provides for a competitive generation capacity procurement mechanism, administered by the Illinois Power Agency with oversight by the Illinois Commerce Commission, which will help ensure long-term resource adequacy for Downstate Illinois, along with stable capacity prices that will support investment in both existing and new generation for the region. While enactment of legislation would certainly improve the economic viability of the entire Illinois fleet, it would not address the problems caused by the current MPS. Even with the legislation enacted, if the MPS remains unmodified, Dynegy's units still would often be bid and operated for the purpose of complying with a maximum emission rate rather than on the basis of economic dispatch principles (as I describe below in this testimony). However, both the legislation and the proposed changes to the MPS will help maintain the viability of Dynegy's Downstate generating fleet and preserve jobs, economic activity, tax base, and support for local communities and local governments in Downstate Illinois.

(about 2360 MW of capacity) in the last several years, and another 3,000 megawatts in the MPS is at risk of shutdown for the economic reasons I have described. If the energy and capacity market conditions continue in their present states and the MPS remains an emissions-rate based program, Dynegy will likely have to retire more plants. Dynegy cannot say at this time whether and which plants would be retired.

The MPS units operate in a total of eight communities Downstate. In the aggregate, these plants employ a total of approximately 1,000 employees, including approximately 670 union employees. These are much needed, family-sustaining jobs in these local communities and in Downstate Illinois generally. In most instances, these jobs are the best or among the best jobs available in the communities in which the plants are located. However, these jobs could be lost. Relatedly, plant retirements would also eliminate the largest single property taxpayer in several school districts, municipalities and counties.

Retirements will also affect grid resiliency and reliability in Downstate Illinois. While the bulk power system can accommodate a diverse mix of generating resources, generators such as Dynegy's coal-fueled, readily-dispatchable units are an important component of the generation mix. Large rotating mass units such as the Dynegy units provide voltage support (reactive power) and frequency response support to the bulk power system, and can provide spinning reserve, all of which are important attributes of grid reliability and resiliency. The potentially adverse impacts to grid reliability and resiliency of the retirements of large coal-fueled units is a factor that needs to be considered by policymakers in evaluating conditions and policies that may adversely affect the economic viability of such generators.

Finally, in my opinion, Dynegy's proposed merger with Vistra does not change any of the economic outlook for the Dynegy plants, because I would expect that Vistra, like Dynegy, will evaluate each plant on a standalone basis based on its economics.

**VI. Proposal's Treatment of Retirements and Transfers**

If the proposed rule revision is enacted, Dynegy does not anticipate any unit retirements specifically due to the new MPS. However, Dynegy is constantly evaluating the economic conditions of each unit. If the capacity market in Zone 4 is not reformed to address the unique characteristics of Downstate Illinois (as MISO has urged the Governor and the four legislative leaders), and energy market conditions do not change, units will likely need to be retired for economic reasons. When units retire, generally there is no corresponding change in electricity demand. As such, the remaining units may be called upon by MISO to operate more frequently to replace the lost generation from the retired plants. The proposed MPS revision does not require the emission caps to change if plant retirements occur. If the emission caps were to be reduced when a unit retires, the ability of the existing units to replace the lost generation of the retired units would be adversely affected, thereby negatively impacting electricity reliability, as well as further reducing the economic viability of the remaining units.

Further, as acknowledged by Illinois EPA, the proposed emission caps are protective of the environment and public health. Not only are they sufficient to ensure compliance with the Regional Haze program, they are protective of the National Ambient Air Quality Standards (NAAQS), as discussed in the testimony of Mr. Diericx, Dynegy's Managing Director-Environmental Compliance. Thus, there is no justification for weakening the economic viability of the generating assets through the imposition of a requirement to reduce the emission caps after a unit in the MPS Group retires.

As originally promulgated, the MPS did not contain provisions addressing unit ownership transfers. In order to address this gap in the existing MPS regulations, the Agency has included provisions in the proposal accounting for unit transfers. Rick Diericx will speak to the unit transfer allocation framework.

## **VII. Conclusion**

Dynegy remains fully committed to protecting the environment and public health. Dynegy does not come before this Board asking the Board to promulgate rules that lessen the protections currently in place through the existing MPS; in fact, we are respectfully asking the Board to promulgate a revised rule that strengthens those protections. The Illinois EPA's proposed changes to the current MPS will also allow Dynegy to make economically rational decisions on how to run the plants while complying with the MPS, which will help to ensure the viability of the entire Illinois fleet.

The emission rate limit framework is no longer economically sustainable for Dynegy, and Dynegy asks this Board to consider carefully the current state of affairs and Illinois EPA's hard work towards restructuring the proposed amendments to strengthen environmental protection while acknowledging the existing economic challenges. I will conclude by stating that the amendment is economically reasonable and technically feasible, and is protective of the environment and public health.

Respectfully submitted,

A handwritten signature in cursive script that reads "Dean Ellis". The signature is written in black ink and is positioned above a horizontal blue line.

Dean Ellis  
Executive Vice-President  
Regulatory and Government Affairs  
Dynergy Inc.

CH2\20288886.6

**CERTIFICATE OF SERVICE**

I, the undersigned, certify that on this 11<sup>th</sup> day of December, 2017, I have electronically served the attached **PREFILED TESTIMONY OF RICK DIERICX** and **PREFILED TESTIMONY OF DEAN ELLIS**, upon all parties on the attached service list.

My e-mail address is [aantonioli@schiffhardin.com](mailto:aantonioli@schiffhardin.com);

The number of pages in the e-mail transmission is 56.

The e-mail transmission took place after 5:00 p.m.

*/s/ Amy Antonioli*

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Amy Antonioli

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