

Sunflower Electric Power Corporation

Testimony On
Cross-State Air Pollution Transport (CSAPR) – Final Rule

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Introduction

Sunflower Electric Power Corporation (Sunflower) appreciates the opportunity to provide testimony to this committee on EPA's Cross-State Air Pollution Rule (CSAPR). For Kansas, CSAPR imposes very near-term requirements (in 2012 and 2014) to reduce annual emissions of nitrogen dioxide (NO_x) and sulfur dioxide (SO₂). EPA also proposes to require Kansas utilities to reduce ozone-season emissions of NO_x, also in the very near-term. Under this proposal, Kansas will be required to offset its ozone-season NO_x emissions with additional allowances for the 2012 ozone-season, even though the ozone-season requirements are still only proposed.

CSAPR will significantly undermine the reliability of the electricity transmission and distribution system and increase the cost of providing electric energy in central and western Kansas. Preliminary modeling by the Southwest Power Pool indicates the rule may cause significant voltage reductions in central and southwest Kansas and in the north Texas panhandle, situations which could lead to electricity blackouts.¹

Moreover, EPA's process for promulgating this rule was technically flawed. Because of changes to EPA's modeling in the middle of the rulemaking process, Kansas became subject to significant, potentially unachievable near-term emission reduction requirements with almost no advance notice. Yet the changes result from modeling that is a proprietary "black box," and we are

¹ See Exhibit 1, slide 7.

therefore unable to understand the exact basis for the emission reduction requirements to which we have become subject.

The modeling itself is also flawed because it assumes the downwind area that is supposedly affected by Kansas' ozone-season emissions is in nonattainment. Yet actual real-world monitoring data show this area is in attainment. Moreover, the modeling does not take into account future reductions from Kansas emission sources that are either already completed or otherwise locked-in and which will reduce any impacts to this area even further.

In sum, Kansas has become subject to very harsh requirements with little advance notice based on (a) use of a model to which the public does not have access and (b) for the ozone-season requirements, the erroneous modeling assumption that Kansas emissions are causing a downwind county to violate EPA air quality standards.

Sunflower and Mid-Kansas

These comments are provided on behalf of Sunflower and Mid-Kansas Electric Company, LLC (Mid-Kansas). Sunflower and Mid-Kansas are not-for profit electric generation and transmission cooperative corporations that are owned and operated by the rural electric distribution cooperatives to which they supply electricity. These distribution cooperatives, in turn, are owned by their members who are electric consumers— families, farms and other businesses. These electric consumers select their distribution cooperative board members through democratic elections, and these board members in turn appoint the board members of Sunflower and Mid-Kansas.

Sunflower is owned by members Lane-Scott Electric Cooperative, Inc., Dighton; Prairie Land Electric Cooperative, Inc., Norton; Pioneer Electric Cooperative, Inc., Ulysses; The Victory Electric Cooperative Association, Inc., Dodge City; Western Cooperative Electric Association, Inc., WaKeeney; and Wheatland Electric Cooperative, Inc., Scott City; all in Kansas.

Mid-Kansas Electric Company, LLC, is a coalition of five rural electric cooperatives and one wholly-owned subsidiary including Lane-Scott Electric Cooperative, Inc., Dighton; Prairie Land Electric Cooperative, Inc., Norton; Southern Pioneer Electric Company, Ulysses (a wholly-owned subsidiary of Pioneer Electric Cooperative, Inc.; The Victory Electric Cooperative Association, Inc., Dodge City; Western Cooperative Electric Association, Inc., WaKeeney; and Wheatland Electric Cooperative, Inc., Scott City; all in Kansas.

Together the electricity provided by Sunflower and Mid-Kansas to these distribution cooperatives, and to more than 25 municipalities within the service area meets the electricity requirements of more than 400,000 people in central and western Kansas. Because Sunflower and Mid-Kansas and their distribution cooperative members operate on a not-for-profit basis, the cost of compliance with CSAPR flows directly through to these electricity consumers.

As in many rural areas, these individuals tend to be older and living on fixed incomes and tend to have incomes below the federally-defined poverty level. The people served at retail by the distribution cooperatives include more than 64,000 (16%) above the age of 65 and more than 48,000 (12%) whose annual household income is below the federal poverty level.

CSAPR impact is immediate

The Administrator of the Environmental Protection Agency (EPA) signed the final CSAPR on July 6, 2011.² The rule was published in the *Federal Register* on August 8, 2011 and is effective January 1, 2012. As proposed, the rule was known as the “Clean Air Transport Rule” (CATR) (July 2010). The rule replaces the Clean Air Interstate Rule (CAIR) that was issued in 2005. CAIR was overturned in court, but remains in place until CSAPR goes into effect on January 1, 2012. The CAIR rule did not apply to Kansas, and the CSAPR rule does not provide adequate time for Kansas utilities to properly respond to its requirements.

Because CAIR requirements have effectively remained in place, the utilities covered by that rule continued pollution control projects planned in 2005 and beyond. These projects included the installation of selective catalytic reactors for reducing NO_x emissions and scrubbers for reducing SO₂ emissions. An allowance trading program was established under CAIR for the affected states to assure that utility plants did not exceed the emissions budgets established by EPA. Many of these pollution control projects were completed in 2010 – the last of them will conclude this fall.

However, several states, including Kansas, were not included in the CAIR rule, and therefore Kansas, and these other states, did not plan for nor did they install the long-term, large-scale pollution control projects that were planned and installed in the CAIR states. Kansas was included in CSAPR as proposed, but the NO_x budgets proposed would not have required any emission reductions at

² 76 Fed. Reg. 48208 (August 8, 2011).

any Sunflower or Mid-Kansas coal or gas-based facilities. In fact, because Sunflower was not impacted by the proposed budget for allowances, Sunflower did not even file comments on the proposed rule.

Sunflower, however, was affected by CSAPR as finalized. Under the rule, Sunflower will receive NO_x allowances adequate to generate only about 50% of its energy requirements in 2012 (Phase I), just five months after the rule became final.³ Project engineering, permitting, vendor selection, manufacture and delivery, and installation of projects to reduce emissions generally consume between 18 and 48 months. Recall that the industrial Midwestern and Southeastern states have been working on similar projects since 2005. The imposition of such a compliance schedule on utilities within states that had absolutely no meaningful notice of such requirements is unjustifiable.

Black Box

The heart of CSAPR is the emission budget that is established for each state. State-wide utility emissions are limited to the amount of their budgets, with the possibility that such budgets can be exceeded if, in limited situations, certain other states are able to emit less than their budgets. As noted, for Sunflower, the budgets mean that Sunflower must find a way to reduce or offset 50 percent of its otherwise forecast NO_x emissions by the beginning of next year.

³ The 2010 average NO_x emission rate for Sunflower/Mid-Kansas resources was about 0.30 lb/mmBtu. The 2012 (Phase I) allowances allocated to Sunflower support an average NO_x emission rate of about 0.16 lb/mmBtu. The 2014 (Phase II) average supported by allowances is just over 0.13 lb/mmBtu.

The way EPA performs its modeling, however, prevents Sunflower from fully understanding why it is that, under the proposed rule, Sunflower would have been allocated sufficient NO_x allowances, but under the final rule those allowances have been cut in half. This is because the model EPA uses, the IPM model, is proprietary and the public therefore is unable to replicate the model results. Thus, although Sunflower can understand the different assumptions that EPA used in the modeling that resulted in the final rule as compared with the proposed rule, we cannot track those changes through the model to see exactly why those changed assumptions resulted in the final NO_x budgets.

It is as if we have been given a very large invoice for payment, but are told we cannot perform an audit to determine how the amount due on the invoice was calculated. Indeed, we are not able to know whether the changes in the Kansas budget resulted from a model glitch or unsubstantiated assumptions by EPA.

We think this is an extremely unfair and certainly not a transparent way for EPA to promulgate rules. Given the large costs for Sunflower, Mid-Kansas and Kansas as a whole, and indeed for the whole country, EPA should either make the model available or use a different, non-proprietary model. The stakes are too high for EPA to keep a key part of the rulemaking process secret.

Questionable Modeling of Impact of Kansas Emissions Outside of Kansas

The premise of CSAPR is that utility emissions are being transported to downwind states, interfering with the ability of these downwind states to attain EPA's national ambient air quality standards (NAAQS). EPA proposes that Kansas should be subject to ozone-season NO_x requirements because EPA air

quality modeling shows that Kansas emissions will cause or contribute to a Holland, Michigan (Allegan County) violation of the 8-hour ozone NAAQS. But this modeling is flawed for two reasons.

First, the assumptions EPA uses to estimate Kansas emissions throughout the rulemaking were based upon actual emissions that occurred in 2006, then in 2008, and finally in 2009 and thus they do not take into consideration the substantial emission reductions that have already been or will be achieved by 2012 and 2014 because of emission control projects already completed or in the pipeline. Additionally, the early allowance allocations, even in January 2010, did not penalize the Sunflower/Mid-Kansas generation facilities at all; clearly something has changed, and we cannot see into the Black-box to identify the changes. It seems plausible that if these recent emission reductions from Kansas sources were considered and if the model properly responded to the changes, that at a minimum the modeled impact on the Allegan County, Michigan receptor would almost certainly be less than the 1% threshold adopted by EPA for significance. It seems plausible to us that, as with CAIR, Kansas should be out of CSAPR altogether and the regulatory program would have no effect on Kansas utilities.

Second, based on actual air quality modeling data, Allegan County is no longer failing to attain the ozone standard. In fact, the Michigan DNRE petitioned EPA on August 2, 2011 to move Allegan County to an attainment classification. The required demonstration concludes that current and future expected ozone air quality, based upon local actions, will meet both the 1-hour and 8-hour ozone NAAQS. Thus, EPA's model, which concludes that Allegan County is in non-attainment, does not reflect real-world conditions.

In summary, for ozone-season NOx emissions, Kansas is proposed to become subject to expensive new standards that may place the Kansas electric supply system at significant risk, with very little notice, in order to solve an air quality problem to which Kansas is no longer significantly contributing and that, in any event, no longer exists at the determined receptor in Michigan.

CSAPR Will Have Significant Reliability Impacts in Kansas and Elsewhere

Sunflower is a member of the Southwest Planning Pool (SPP). The SPP is a Regional Transmission Organization (RTO), mandated by the Federal Energy Regulatory Commission (FERC) to ensure reliable supplies of power, adequate transmission infrastructure, and competitive wholesale prices of electricity in an eight-state region in the middle of the United States. As a North American Electric Reliability Corporation Regional Entity, SPP oversees enforcement and development of reliability standards.

SPP engages in regular planning to ensure reliable operation of the system. The SPP transmission planning process is described in Attachment O of the SPP Open Access Transmission Tariff and utilizes three planning horizons. The Near Term Assessment is conducted annually and generally looks at time horizon of three to five years. SPP long range transmission planning is conducted over a three-year planning cycle with a 20-year assessment being conducted during the first half of the three year cycle and a 10-year assessment conducted in the second half of the three year cycle. This open and transparent planning process developed by the SPP stakeholders and approved by FERC is utilized to assure that the type of incremental changes in supply and transmission resources that

utilities normally make are planned and implemented consistent with reliability requirements.

However, the requirements of CSAPR, which go into effect in 2012, are being implemented much too quickly to be adequately studied by SPP and accommodated in the SPP's normal planning process. Indeed, the SPP has only recently begun studying the impacts of CSAPR on the reliable operation of the SPP system, because the rule was only recently issued.

Moreover, EPA is not proposing the type of incremental changes for 2012/2014 that would normally be a subject of short-term study by the SPP, a process with sufficient time to plan how to accommodate those incremental changes. Rather EPA is implementing a dramatic shift in operating resources that will lead to a re-dispatch of the system as compared to the current dispatch plan. In fact, the Sunflower/Mid-Kansas resources identified by EPA to be dispatched in those years include substantial operation of the Great Bend, Holcomb 1, and S3 units.

But this unit dispatch makes little sense and it is the LEAST likely generation scenario that would be actually dispatched absent CSAPR. EPA allowances are only adequate to support a 50% capacity factor on Holcomb 1, while historical capacity factors are consistently above 90%. Further, natural gas prices make the Great Bend unit the last resource likely to be dispatched to meet the load. Finally, S3 is a black-start combustion turbine with the highest heat rate of any generating unit in the system; it is also the oldest unit operated for the combined Sunflower/Mid-Kansas system and would likely require substantial pre-operational maintenance if such a duty-cycle were to be reasonably expected of it. CSAPR, thus, will have a radical and unplanned effect on our system, the systems of other Kansas utilities, and indeed on the entire SPP.

Had there been time to implement these significant dispatch changes into the way the electric system operates, both in Kansas and throughout the SPP region, the SPP would have long-ago been working on a dispatch model that conforms the proposed dispatch to assess the needed improvements to preserve the real-world system reliability. Instead SPP is hurriedly assessing the reliability impacts of the CSAPR utilizing EPA's generation dispatch model under. Preliminary results suggest that in the summer of 2012 there will be significant degradation of voltage levels in southwest and south central Kansas and the north Texas panhandle, and that these conditions could cause various blackout conditions to occur. At the current time, given CSAPR, the SPP computers have not been able to solve the approximately 50,000 simultaneous equations necessary to indicate that the electricity grid model remains intact. SPP engineers, though, have been able to identify several local severe voltage contingencies in Sunflower's service area.

The SPP continues to study the reliability effects of CSAPR and will have more definitive information in the near future. As previously stated, the short lead-time for implementation of CSAPR does not adequately allow for planning or implementation of environmental controls or additional generating resources needed to comply with CSAPR. This puts electric generation operators, transmission owners, and reliability coordinators in a proverbial "Catch-22" situation: they can either maintain system reliability and violate EPA mandates and be subject to EPA sanctions or they can comply with EPA mandates and risk system reliability and face NERC and FERC sanctions. Most importantly, electric customers will bear the increased costs associated with either outcome.

CSAPR Compliance Options

The reason the CSAPR requirements are so costly and, indeed, may not be achievable is the fact that EPA has overstated the ability of utilities like Sunflower and Mid-Kansas to comply with the rule on such short notice. EPA has suggested that utilities can comply with the rule by installing new control technology, by relying more on natural gas, by allowance trading, by fuel switching to natural gas and low-sulfur coal, and by purchasing electricity from others. Yet none of these options is truly available given the extremely short compliance schedule.

The time-frame for construction of emission control technologies is not adequate

– Obviously, for systems that do not have pollution control projects nearing completion as a result of CAIR, there is no possibility of constructing new pollution control devices by the end of this year or even by 2014. In addition to construction times, nearly all of these projects will require the issuance of a PSD construction permit prior to commencing construction; failure to secure such a permit is a criminal offense under the PSD permit program. Sunflower has been engaged in such a process since early 2010, intending to finish the installation of a low-NO_x burner, overfire air system in the fall of 2013. Because of pre-existing plans, we already had a PSD permit application submitted in March 2011, expected a permit issuance by spring of 2012 (about one year), and expected to issue contracts for manufacture in early summer 2012. In order to expedite the process, we issued a letter of intent so as to commence manufacture of the burner components on August 1, 2011 (a year ahead of schedule) and have rescheduled our outage for January, 2012, effectively advancing the project schedule by over 18 months. But this schedule was not without consequences; we expect to pay a 20 to 25% premium for the components, which will now be manufactured in China. But even if expedited, more capital-intensive projects, such as selective catalytic reactor or scrubber installations, cannot be completed in time to meet Phase II requirements.

New natural-gas based resources cannot be brought on line quickly enough - achieving reductions by bringing new resources on line in such a short time-frame, unless such resources were already in process, simply cannot be done by 2012 or 2014.

Allowance trades within Kansas are inadequate for utilities – CSAPR authorizes intrastate trading of CSAPR allowances, but that will have only a limited effect for Kansas utilities. All Kansas utilities must reduce emissions significantly. It is highly unlikely that any of them can reduce so quickly and so significantly as to generate sufficient allowances to cover the emissions of other Kansas utilities. In Sunflower's situation there will not be an excess supply of allowances to trade among Kansas utilities.

The importation of up to 18% of budgeted allowances from states that have met their objectives is inadequate for Kansas – CSAPR authorizes limited interstate trading of allowances. A state can exceed its budget by up to 18% if another state with which it is authorized to trade has excess allowances. But there is good reason to believe that the trading market will not be robust, particularly by 2012 and even 2014. First, the rule is so new and its effect so little understood because of its complexity that utilities that do generate excess allowances will bank them for their own future use rather than trading them. Second, utilities will likely be particularly cautious about trading given the experience in CAIR. When CAIR was overturned in court, the value of CAIR allowances was immediately reduced to near-zero. Under CSAPR, EPA is about to terminate utility accounts of both CAIR and acid rain allowances. This results in the elimination of millions of dollars in allowance values. Having seen their significant investments in CAIR allowances disappear, utilities are likely to be reluctant to jump into significant allowance-trading under CSAPR. Finally, utility caution about trading will be

enhanced by the significant penalty provisions that are associated with a state exceeding its emissions budget but being unable to cover that excess with allowances from other states.⁴

In sum, it is unreasonable for EPA to expect utilities to rely on trading in the early years of the rule to make up for their inability to install controls fast enough.

Fuel switching – EPA identifies that a key compliance strategy for implementing CSAPR is for utilities to switch from high-sulfur to low-sulfur coal, or from coal to natural gas. Even assuming that sufficient fuel and transportation resources exist for such a strategy to be widely effective, it does not solve the problem for Kansas utilities. Specifically for managing SO₂ reductions there are only two Kansas units that blend some relatively small amounts of local Kansas coal with low-sulfur coal; all other coal-based units already use low-sulfur PRB coal. Further, the act of switching steam units from coal to natural gas fuel to manage NO_x results in only a trivial reduction; switching the generation dispatch from PRB coal-based steam units to gas-based steam units likewise does not accomplish any significant reduction.

Electricity purchases from other providers – EPA's suggestion that the purchase of electricity from other providers is a viable way of meeting the allowance dilemma is not realistic. Electricity markets now take the form of very short-term

⁴ EPA, in the final CSAPR rule, determined that SO₂ allowances would be available for purchase at about \$600, annual NO_x allowances at \$500, and ozone season NO_x allowances at \$1300. First contracts for allowance trading completed just this last week have been reported at SO₂ prices of \$2600 per allowance and annual NO_x allowances at \$3500 each. These prices reported are four to seven times higher than EPA estimated for such transactions.

purchases – known as the existing “next-day market” and the soon to be implemented “day-two” market – and firm power transactions that are for fixed terms of length suitable for the participants. Power purchases as a compliance strategy either will not work or will drive up the cost of electricity.

First, short-term markets rely on price signals determined by individual utilities on an ongoing basis. Like other utilities in the SPP Sunflower prices all of its resources each day into the “next-day” market. For Sunflower to sell electricity to others so that they can meet their CSAPR obligations Sunflower would have to increase generation from its own resources, thereby increasing emissions above the EPA-determined budget which could only be satisfied by purchasing additional allowances. How then does Sunflower price the resources that it would utilize for the benefit of another’s allowance shortages without transferring the same allowance shortage to itself by the same transaction? The net effect of these uncertainties will likely make trading more difficult, not less, and increase the price of electricity to all who make such transactions.

Long-term transactions, on the other hand, are the responsible way to meet pool obligations when such a large part of the native load (50% in the case of Sunflower) now needs to be met with a purchased power contract. However before any utility can expect delivery of electricity by a firm contract it must arrange a firm transmission path, a process that requires the power pool’s involvement to determine whether such a path is available for the transfer of firm electricity from one company to a neighboring company. It is already too late for Sunflower to acquire such a path in order to meet peak-season 2012 loads, and it is probably too late for the 2013 peak season.⁵

⁵ This process can take 12 to 18 months to complete the studies and if additional transmission needs to be constructed this could take anywhere from 3 to 10 years, depending on the scope of facilities necessary.

Clearly EPA's conclusion that the purchase of power from other utilities is not a clear path on which utilities can depend for complying with EPA's emission dispatch of electricity producing resources.

Conclusion

CSAPR will result in large consequences for rural Kansas electric consumers, including the undermining of the reliability of the electric system, yet the rule is based on flawed modeling. The model is a "black box," preventing utilities from understanding the significant changes in budgets that occurred from the proposed rule to the final rule. Moreover, for the ozone-season NOx program, the modeling assumes that Kansas emissions are contributing to the inability of a single county in Michigan to attain EPA air quality standards, yet that county is already attaining those standards.

Sunflower and Mid-Kansas appreciate the opportunity to submit this testimony and we would be glad to respond to any questions you might have.