

SERVICES YOU COUNT ON

The Joint Committee on Energy and Environmental Policy
Kansas Legislature

Testimony of George Thullesen, Director of Environmental Policy
The Empire District Electric Company

October 17, 2011

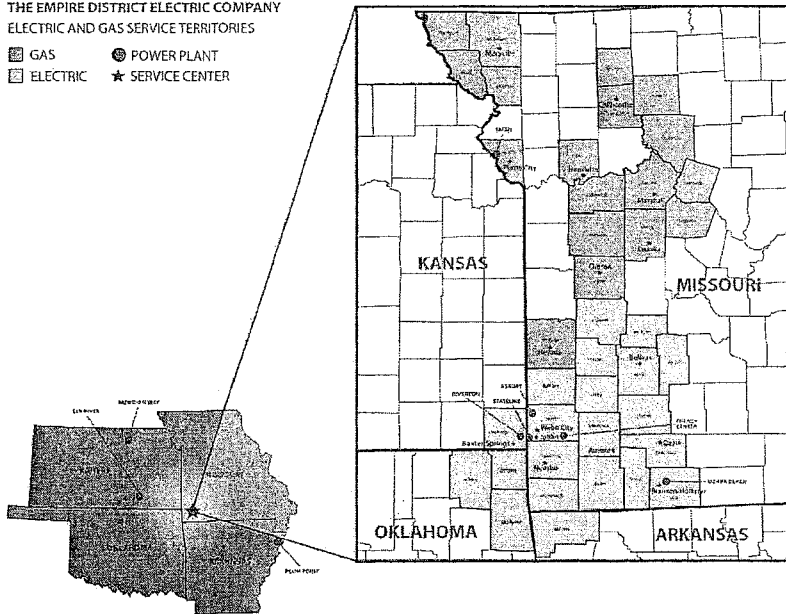
Costs and Effects of Complying with EPA Regulations

To: The Honorable Chairman Carl Holmes and Members of the Joint Committee on Energy and Environmental Policy.

My name is George Thullesen and I reside at 10255 SE Messer Road, Galena Kansas. I am the Director of Environmental Policy for The Empire District Electric Company (Empire District). On behalf of Empire District, I thank you for this opportunity and respectfully offer these comments to the Joint Committee on Energy and Environmental Policy regarding possible impacts on Empire District caused by recently proposed and finalized environmental regulations issued by the United States Environmental Protection Agency (EPA). Empire District, a Kansas corporation, located at 602 S. Joplin Ave., Joplin, Missouri is an investor-owned utility serving over 169,000 electric and 44,000 natural gas customers in the states of Missouri, Kansas, Oklahoma and Arkansas. Our electric service territory includes Cherokee County in southeast Kansas. Our Riverton Power Station is located at Riverton, Kansas.

THE EMPIRE DISTRICT ELECTRIC COMPANY
ELECTRIC AND GAS SERVICE TERRITORIES

- GAS
ELECTRIC
POWER PLANT
SERVICE CENTER



Empire District's generation facilities and Purchase Power Agreements are listed below:

Unit	Energy Source	Rating MW	Regulatory Regime
*Asbury	Coal	207	Missouri
Iatan I & II (12% Ownership)	Coal	187	Missouri
Plum Point (7.52% Ownership)	Coal	50	Arkansas
*Riverton	Coal and Nat gas/ Oil	283	Kansas
*Energy Center	Nat Gas/Oil	262	Missouri
*State Line	Nat Gas/Oil	94	Missouri
State Line (60% Ownership)	Nat Gas	300	Missouri
*Ozark Beach	Hydro	16	Missouri
Owned Capacity		1,399	
Plum Point PPA	Coal	50	Arkansas
**150 MW Elk River Wind Farm PPA	Wind	7	Kansas
**105 MW Meridian Way Wind Farm PPA	Wind	8	Kansas
PPA Capacity		65	
TOTAL Capacity		1,464	

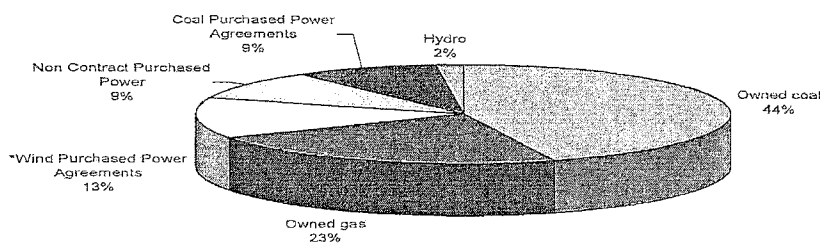
*Wholly owned Facilities

**Capacity Restriction for wind

It is imperative that all electric utilities have adequate generating capacity to meet their projected instantaneous peak demands plus a margin that is sufficient to guarantee continuous service and avoid the need for emergency measures such as rolling black-outs. Empire District is a summer and winter peaking electric utility with a maximum record summer peak of 1,198 MW and a maximum record winter peak of 1,199 MW. Our current total capacity is sufficient at this time.

Empire District's energy sources are diverse. Approximately 53% of our energy comes from coal, 32% from natural gas and 15 % from non-fossil fuel sources such as *wind and hydro.

2010 Source of Power by Energy Type



*Renewable attributes from Elk River and Meridian Way Purchased Power Agreements are sold to 3rd parties and Empire cannot claim wind as a renewable source of energy.

Costs and Effects of Complying with EPA Regulations

Recently proposed and finalized EPA regulations that will have a significant impact on Empire District include:

- Air: The Cross-State Air Prevention Rule (CSAPR), the Mercury and Air Toxics Standard (MATS) and the 1-hour SO₂ National Ambient Air Quality Standard (SO₂ NAAQS)
- Water: The Clean Water Act 316(b) Water Intake Structures at Existing Facilities Rule (Water Intake Rule)
- Solid Waste: The Disposal of Coal Combustion Residuals from Electric Utilities Rule (CCR Rule)

The Water Intake Rule may have a significant impact on Iatan Unit I and the CCR Rule may have a significant impact on Iatan Units I and II and Plum Point Unit I. Empire District does not operate these facilities. For Iatan Units I and II we defer estimated cost impacts to the testimony presented by the Kansas City Power and Light Company. However, we note that 12% of the impact costs to Iatan Units I and II and 7.52% of the impact costs to Plum Point I will be borne by Empire District customers.

We expect that allocated allowances for our natural gas fired units in CSAPR will be marginally sufficient to meet projected emission needs and that these units will be able to comply with the other listed regulations.

The following summary of regulatory impacts will be limited to our Riverton Power Station Units 7 and 8 and our Asbury Power Plant. Riverton Unit 7 is a 1949 vintage 38 MW coal-fired unit and Riverton Unit 8 is a 1954 vintage 54 MW coal-fired unit. Both

were originally designed to burn coal and natural gas. The Asbury Power Plant is a 1969 vintage 207 MW coal-fired unit. All are baseload units.

AIR

Cross State Air Pollution Rule (CSAPR):

Riverton: The allocation of allowances for SO₂, annual NO_x and ozone season NO_x for both Riverton units was significantly insufficient to meet expected emissions for 2012. Current compliance plans include switching to 100% low-sulfur coal, purchasing additional allowances, purchasing alternate energy and/or fuel switching to natural gas. The cost of these alternatives is expected to be significant and to be recoverable in our rates.

Asbury: The allocation of SO₂ allowances was significantly insufficient to meet expected emissions for 2012. Fuel switching to natural gas is not an option at Asbury. Our short term plans for 2012-2014 include switching to 100% low sulfur coal and purchasing allowances for SO₂. We installed an SCR for NO_x control in 2008 at a cost of \$31 million. We expect the allocation of annual and ozone season NO_x allowances to be adequate. We expect the cost of additional SO₂ allowances to be recoverable in our rates.

Mercury and Air Toxics Standard (MATS):

Riverton: Due to the age of the Riverton coal-fired units, it will not be feasible to retrofit them with required mercury, heavy metals and acid gases control equipment. Therefore, we expect MATS to result in either switching these units to natural gas or to force their retirement. Switching these units to natural gas would result in their limited use as peaking units. Since these are baseload units we would need to replace their baseload capacity of 92 MW to assure reliability. We are not in a position to provide solid estimates of the cost of replacement capacity. Any capacity replacement would be the least cost option. We expect replacement capacity costs to be substantial and to be recoverable in our rates.

Asbury: We expect MATS to require the addition of a sulfur scrubber to reduce acid gas emissions, a baghouse to reduce heavy metal emissions and a powder activated carbon injection system to reduce mercury emissions with the estimated cost to range from \$120 million to \$180 million. We expect these costs and added operation and maintenance costs to be recoverable in our rates.

SO₂ National Ambient Air Quality Standard (SO₂ NAAQS)

Riverton: As of this date we have not verified that switching to low sulfur coal will enable Riverton to comply with the new SO₂ NAAQS of 75 ppb on a 1-hour basis. If it does not, compliance can only be attained by switching fuel to natural gas or retirement. Either would require the replacement of 92 MW of baseload generation.

Asbury: As of this date we have not verified that switching to low sulfur coal will allow Asbury to comply with the new SO₂ NAAQS of 75 ppb on a 1-hour basis. We do expect that the addition of a sulfur scrubber to meet MATS would result in attainment.

Note: EPA's draft modeling guidance will be used by the states to determine attainment or non-attainment with the SO₂ NAAQS. It implies that the states will not be permitted to exempt start-up, shut-down or malfunction (SSM) conditions from non-compliance with the SO₂ NAAQS. Since this is a 1-hour standard and since SO₂ controls are not effective during SSM it appears that 100% attainment with this standard is impossible and utilities will be open to possible EPA enforcement action or 3rd party litigation.

Water Intake Rule

Riverton: The full impact of the proposed Water Intake Rule will not be known until finalized. If finalized as proposed we would be forced to install approved traveling screens with fish return systems and perform extensive compliance testing. Due to their age this could force retirement of the units in spite of the fact that previous studies have shown the water intakes to have minimal or insignificant impact on the biota of the lake. In addition, the rule would not permit the option of operating these units as natural gas-fired peaking units without the required intake modifications and testing. Therefore, as proposed this rule could force the retirement of the units. Since these units are baseload units the capacity of 92 MW would require replacement in order to ensure reliability. We would expect these costs to be recoverable in our rates.

Asbury: Not impacted.

Coal Combustion Residuals Rule (CCR Rule):

Riverton: The CCR Rule, as proposed, would require the closure of the existing surface impoundment and construction of a new landfill. Due to the vintage of these units and the physical location of the facility construction of a new landfill is not an option. Closure of the existing surface impoundment would result in either switching fuel to natural gas or retirement. Both options would require replacement of 92 MW of baseload capacity.

Asbury: Compliance will require switching the current wet-handling system for ash removal to a dry handling system, the closure of the existing surface impoundment and the construction of a new landfill. We expect the estimated cost of these requirements to be up to \$15 million. This estimate includes the closure of the Riverton impoundment.

Should EPA finalize the CCR Rule under subtitle C of the Resource Conservation and Recovery Act and re-classify CCR as a special or hazardous waste we have major concerns that the operation and maintenance of the ash handling system and equipment would be onerous or even impossible under OSHA regulations for hazardous waste.

Summary

As stated above, the estimated cost for the retrofitting of control equipment, changing to a dry ash handling system, construction of a new landfill and closure of the existing surface impoundment at the Asbury Power Plant and closure of the Riverton Power Station surface impoundment ranges from \$135 million to \$195 million. This estimate does not include the possible replacement of 92 MW of baseload power at Riverton, costs associated with Iatan Units I and II or Plum Point Unit I, the additional fuel cost of natural gas, purchase of replacement power or the need to purchase emission allowances. Although we can not provide, at this time, an estimate of additional construction costs or operation and maintenance costs we expect that the rate impact would be substantial.

On behalf of Empire District I thank you for the opportunity to provide this information and would be please to provide needed clarifications or answer any questions.



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