

Empire District Electric

MPSC Environmental Regulations Overview

Case No. EW-2012-0065



October 26, 2011

Presentation Overview

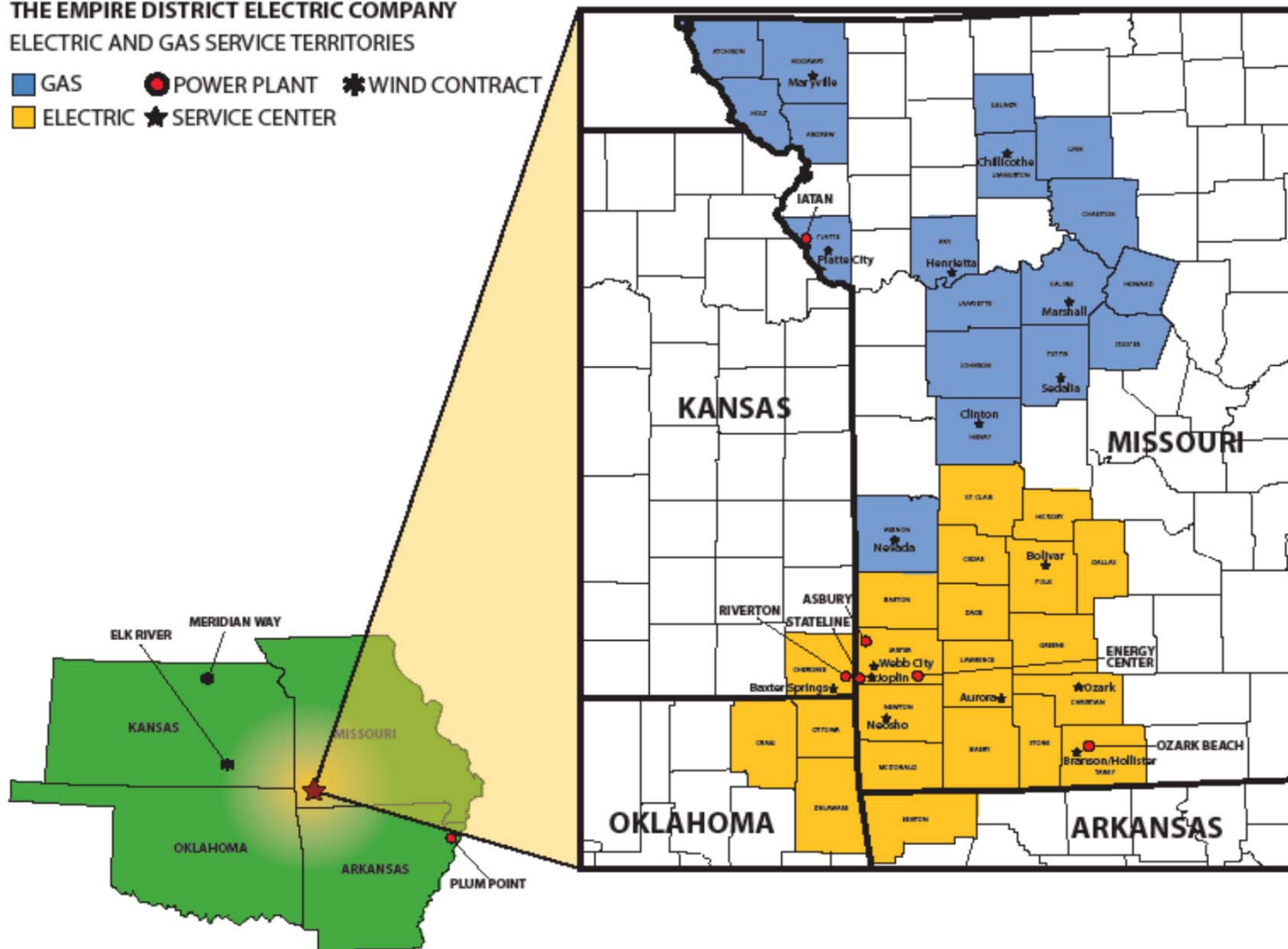
- Empire Overview
- Empire 5-Year Emissions
- Cross State Air Pollution Rule (CSAPR) and Compliance
- Power Plant Mercury – Air Toxics Standards and Compliance
- Regional Haze (MDNR and KDHE) and Compliance
- 2010 SO₂ National Ambient Air Quality Standard (NAAQS) and Compliance
- Questions

Empire's Service Territory

THE EMPIRE DISTRICT ELECTRIC COMPANY

ELECTRIC AND GAS SERVICE TERRITORIES

- GAS
- POWER PLANT
- ✱ WIND CONTRACT
- ELECTRIC
- ★ SERVICE CENTER



Empire Capacity

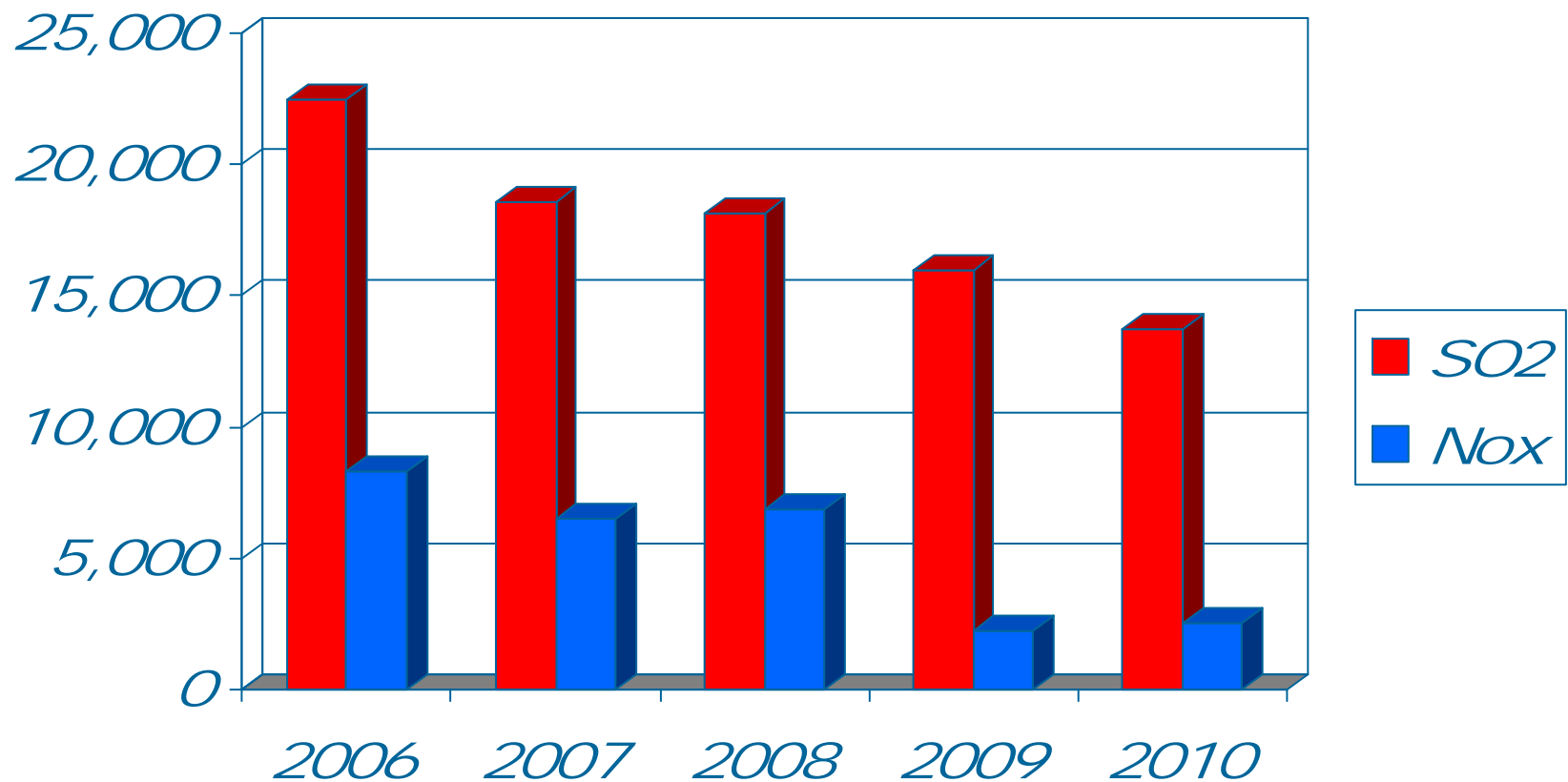
Empire District's generation facilities and Purchase Power Agreements are listed below:

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	

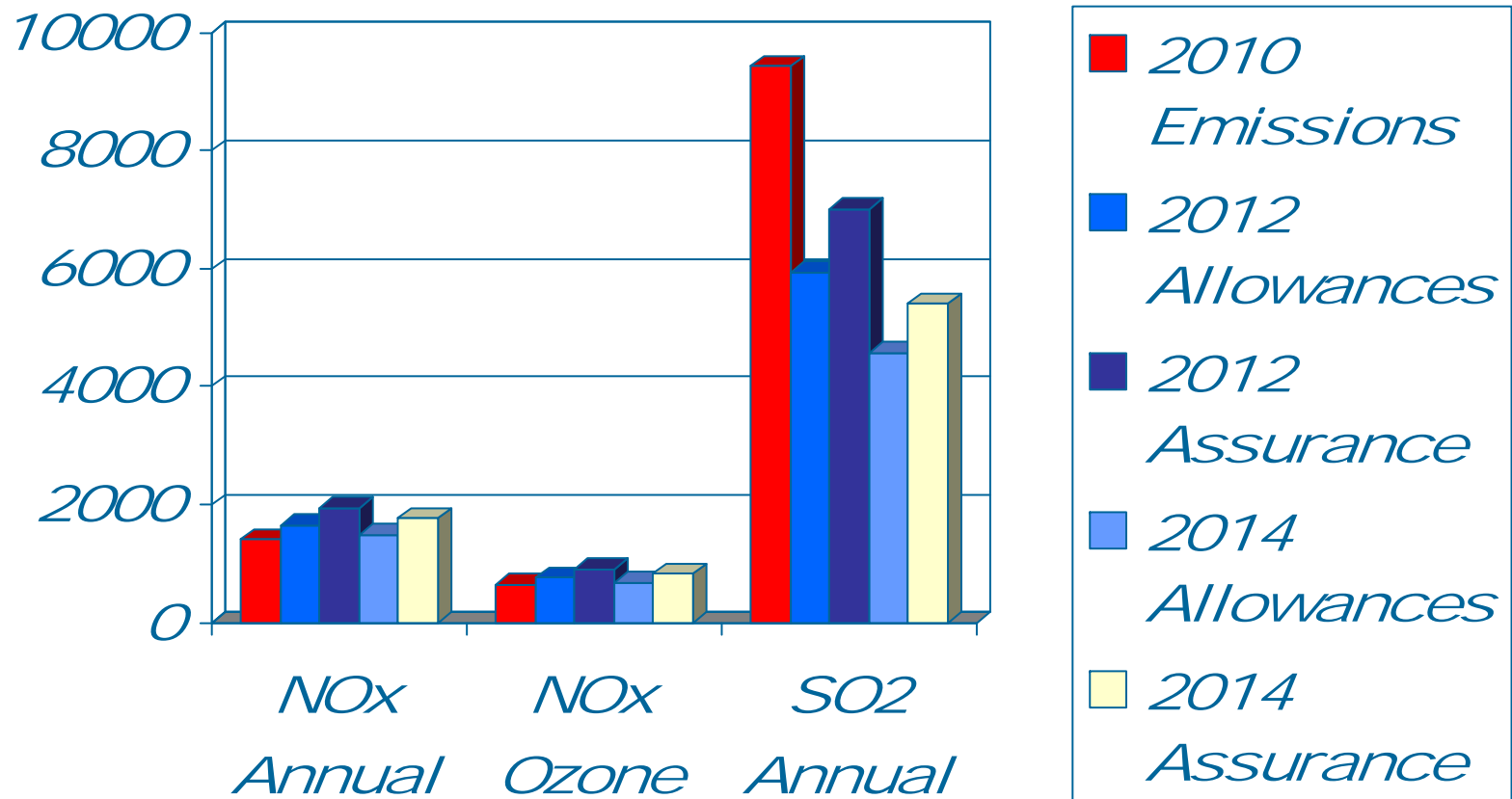
*Wholly owned Facilities

**Capacity Restriction for wind

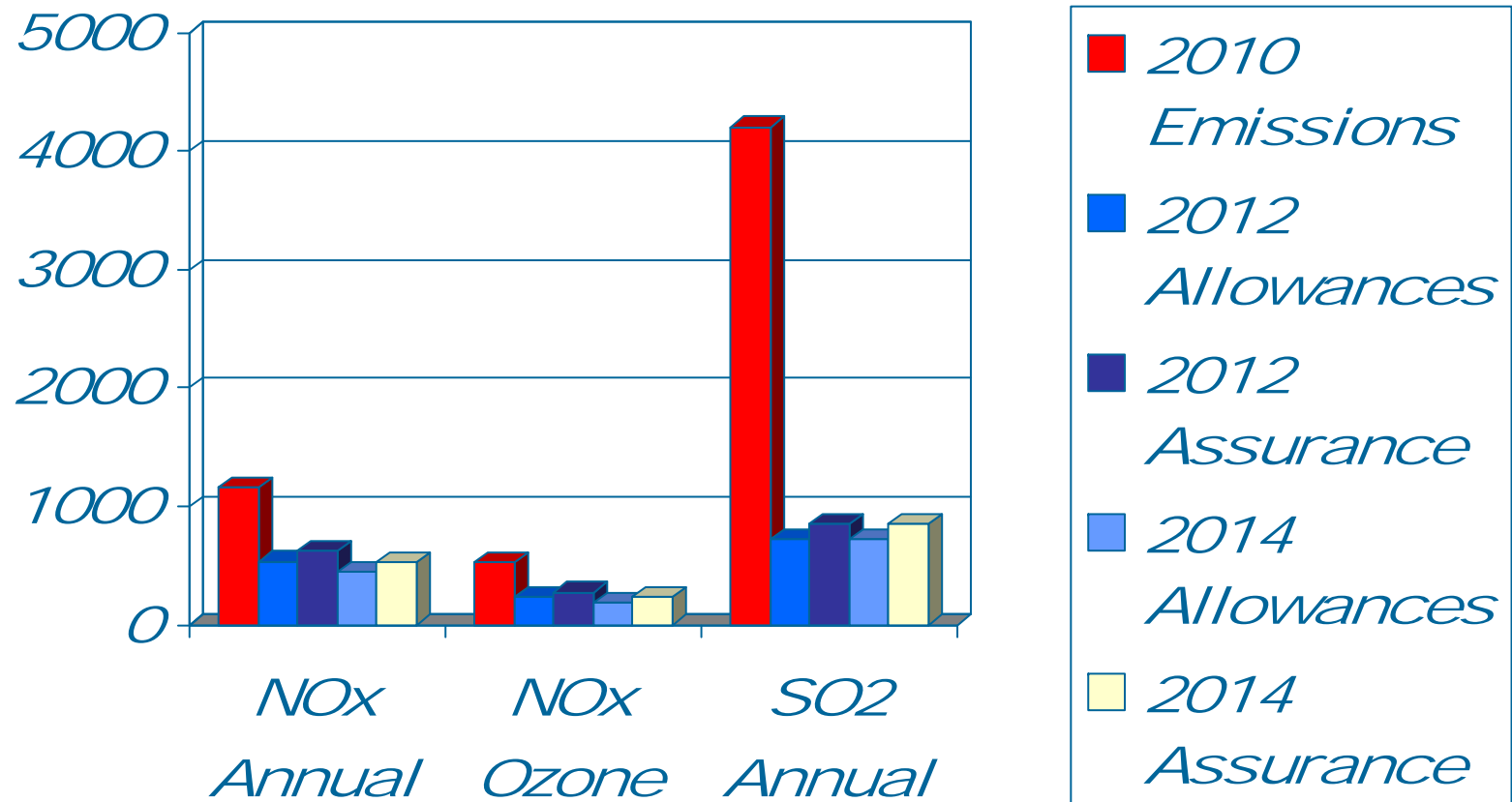
Empire Emissions (tons)



CSAPR and Compliance (MO)



CSAPR and Compliance (KS)



CSAPR and Compliance (Con't)

- Empire will have additional NO_x allowances in MO and short in KS
- Empire is short of SO₂ allowances in both MO and KS
- Compliance Options for Riverton Units 7 and 8
 - ▶ Fuel blend changes
 - ▶ Fuel switching
 - ▶ Purchase of allowances
 - ▶ Retirement of units
- Compliance Options for Asbury
 - ▶ Fuel switching
 - ▶ Retrofit unit with scrubber for SO₂ (unit already has SCR for NO_x)
 - ▶ Retirement of unit

Power Plant Mercury and Air Toxics Rule

- Iatan Units 1 and 2 – No impact anticipated
- Asbury Compliance Options
 - ▶ Scrubber or other SO₂ control, baghouse for PM and PAC for Hg control
 - ▶ Retirement of unit resulting in replacement capacity
- Riverton Units 7 and 8 Compliance Options
 - ▶ Retrofit with emission controls not feasible
 - ▶ Fuel switching
 - ▶ Retirement of Units
- Plum Point – No impact anticipated

Regional Haze (MDNR and KDHE) and Compliance

■ MO

- ▶ Iatan Units 1 and 2 and Asbury – No impact

■ KS

- ▶ Riverton Units 7 and 8 – No impact at this time

■ AR

- ▶ No impact anticipated at Plum Point

2010 SO₂ National Ambient Air Quality Standard (NAAQS) and Compliance

■ MO

- ▶ No impact anticipated at Iatan Units 1 and 2
- ▶ No impact anticipated in next 5 years at Asbury at this time but expect to impact at later time

■ KS

- ▶ No impact anticipated in next 5 years at Riverton Units 7 and 8 but expect to impact at later time

■ AR

- ▶ No impact anticipated at Plum Point

Compliance Plans/Cost/Timeframe

- No additional controls expected at Iatan Units 1 and 2 or Plum Point
- Asbury
 - ▶ Current IRP says retrofit Asbury at cost ranging from \$120M - \$180M is least cost
 - Scrubber for SO₂
 - Baghouse for PM
 - PAC injection for Hg
 - ▶ 2015 timeframe
 - ▶ Still evaluating
- Riverton
 - ▶ Multitude of options
 - Fuel blend changes
 - Fuel switching
 - Retirement of units
 - Will not retrofit with scrubber, SCR, baghouse, PAC as it is not cost effective
 - ▶ Still evaluating

Questions??

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