



ENVIRONMENTAL Q & A

AIR QUALITY – CLEAN AIR ACT



Electric



Water



Digital TV



Internet

There's a reason reliability is so important to us. We live here too.

Reliable. Responsive. Responsible.

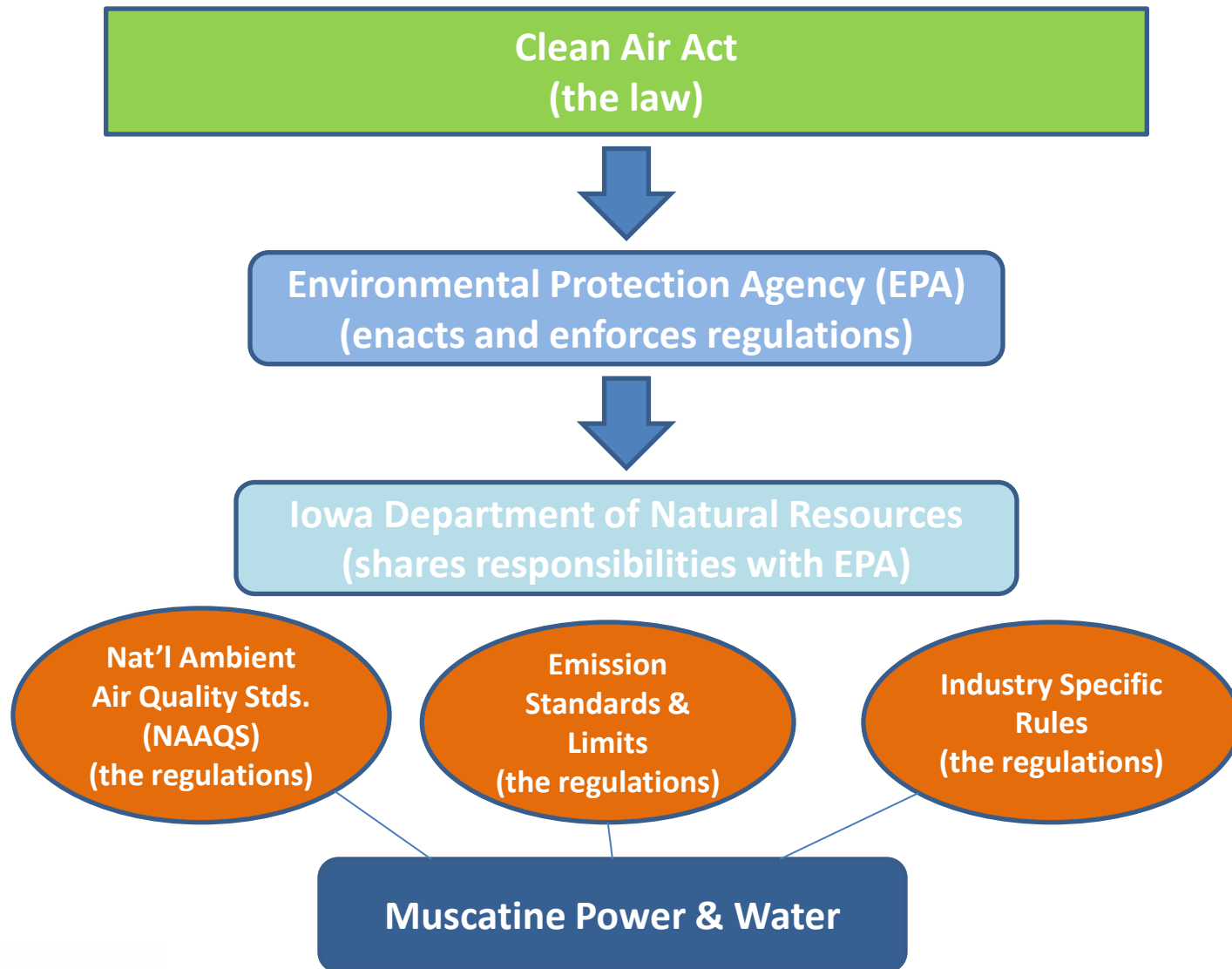


**Muscatine
Power and Water**

An Introduction

- One of Muscatine Power and Water's (MP&W) Core Values is to *“proactively comply with environmental regulations and engage in responsible environmental stewardship, recognizing that our operations impact the environment.”*
- MP&W has an excellent record of environmental compliance and is invested in the health of the community.

Where Do Air Quality Regulations Come From?



Environmental Regulation Cycle

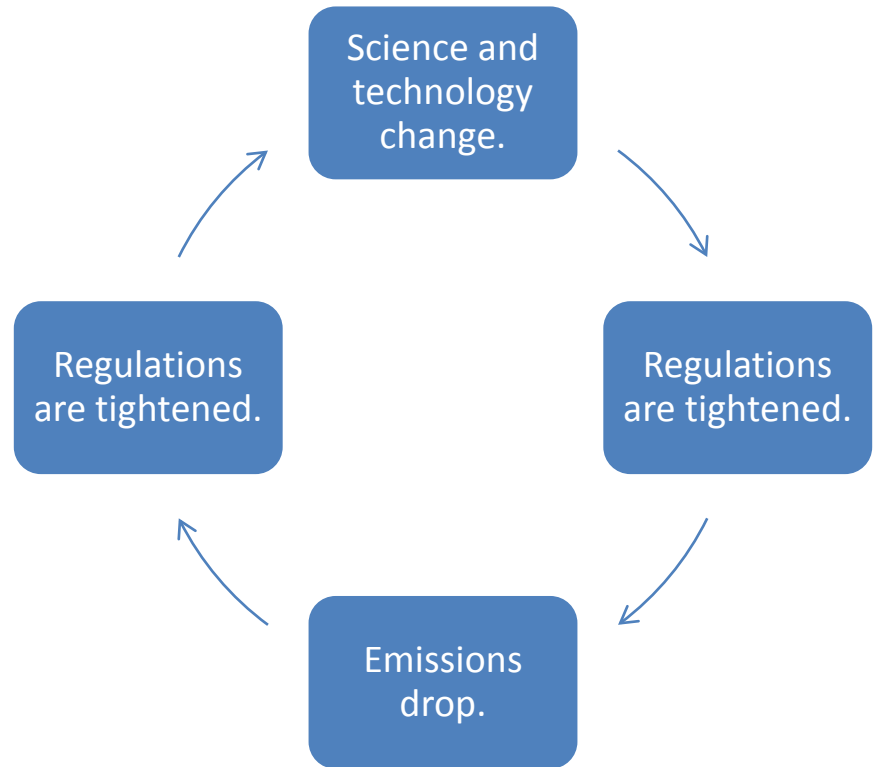
Q It seems as though environmental regulations are always changing. Why?

A Clean Air Act regulations are required by law to be reviewed by EPA on a periodic basis (usually every 5 years).

Medical science and pollution control technologies change and the regulations are tightened.

Emissions drop because of tighter regulations and new control technology.

By the time a revised air regulation is issued and through court review, the process is already starting over again.



Environmental Issues Facing MP&W

Q What are the significant environmental air quality-related issues that face MP&W?

A The EPA continues to issue new and revised air quality regulations that affect power plants.

The EPA is expanding the list of regulated pollutants in addition to reducing the amount of emissions allowed.

**NAAQS
(local air
quality)**

SO₂, NO_x,
Ozone, PM

**Emission
Standards and
Limits**

Air Toxics Rule,
Cross State Air Pollution Rule,
Greenhouse Gas Tailoring Rule,
New Source Performance Standards,
Small Boiler MACT

**Industry
Specific
Rules**

Coal
Combustion
Residue

Implementing Changes

Q Why does EPA allow several years to reach new compliance levels?

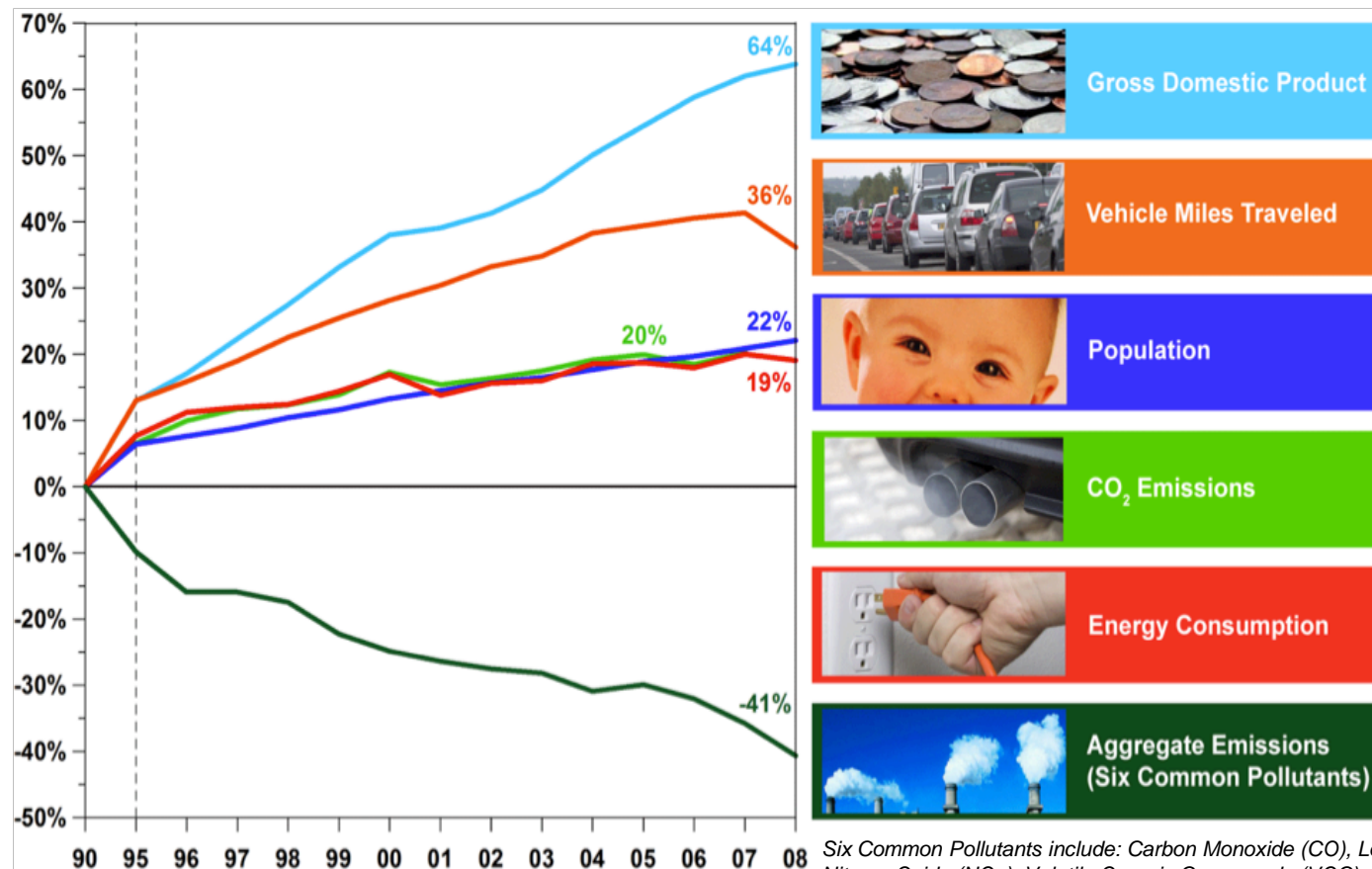
A The EPA recognizes the process to implement environmental compliance solutions has many steps that make it a challenge to achieve compliance. EPA gives industry what it feels is a reasonable period of time to achieve compliance.

The steps for MP&W to achieve compliance include:

- Research and selection of a control technology
- Designing a project
- Obtaining environmental permits
- Financing & public bidding
- Lead time on materials
- Construction
- Acceptance testing

Do These Rules Work? What is the Effect?

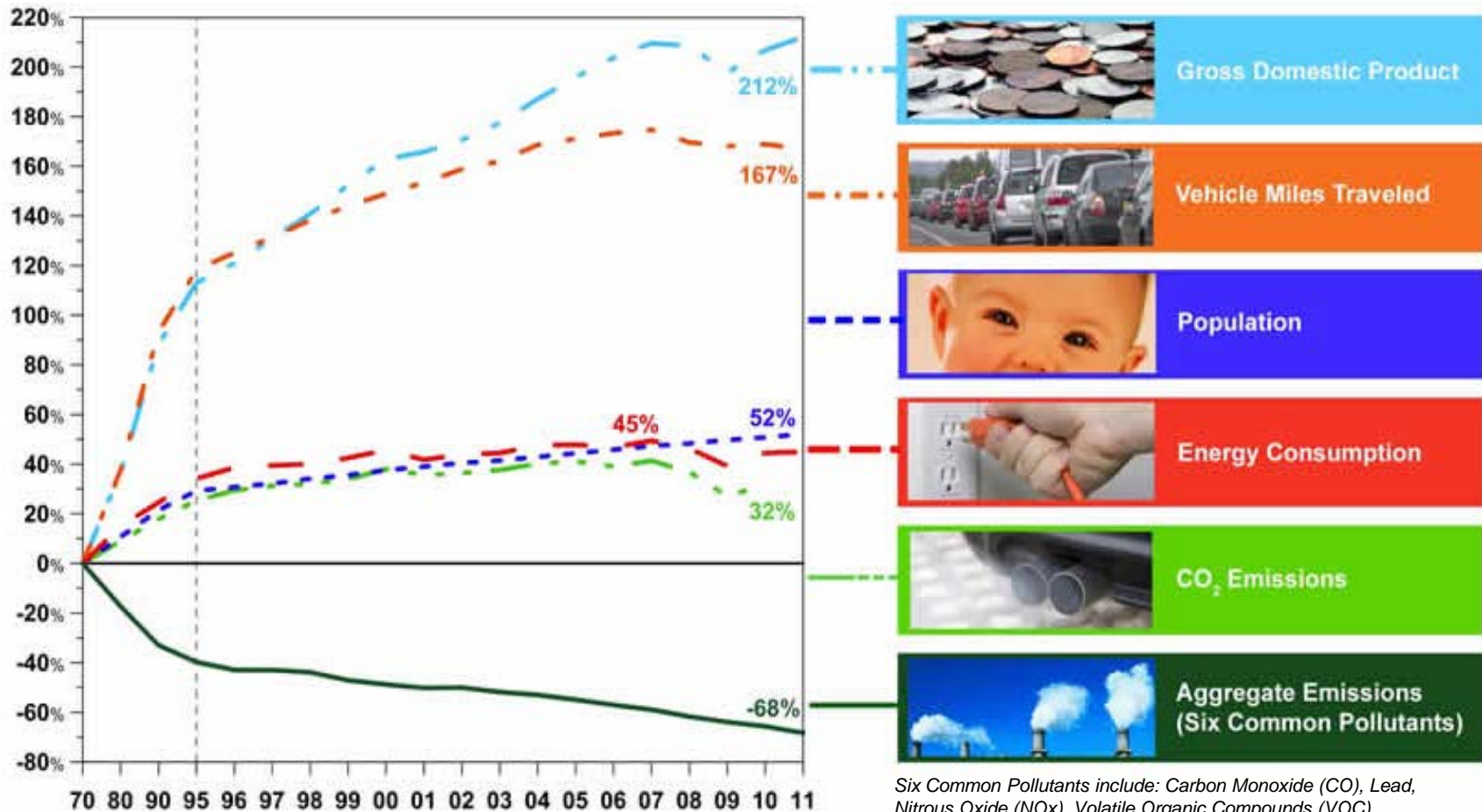
Yes, these rules work. Air quality is improving and emissions have decreased, even though population, energy consumption, vehicle miles, and production have all increased. Nationally, aggregate emissions have reduced 41% since 1990.



Six Common Pollutants include: Carbon Monoxide (CO), Lead, Nitrous Oxide (NO_x), Volatile Organic Compounds (VOC), Particulate Matter, and Sulfur Dioxide (SO₂)

Do These Rules Work? What is the Effect?

Historically, national aggregate emissions have reduced 68% since 1970.



Six Common Pollutants include: Carbon Monoxide (CO), Lead, Nitrous Oxide (NOx), Volatile Organic Compounds (VOC), Particulate Matter, and Sulfur Dioxide (SO₂)

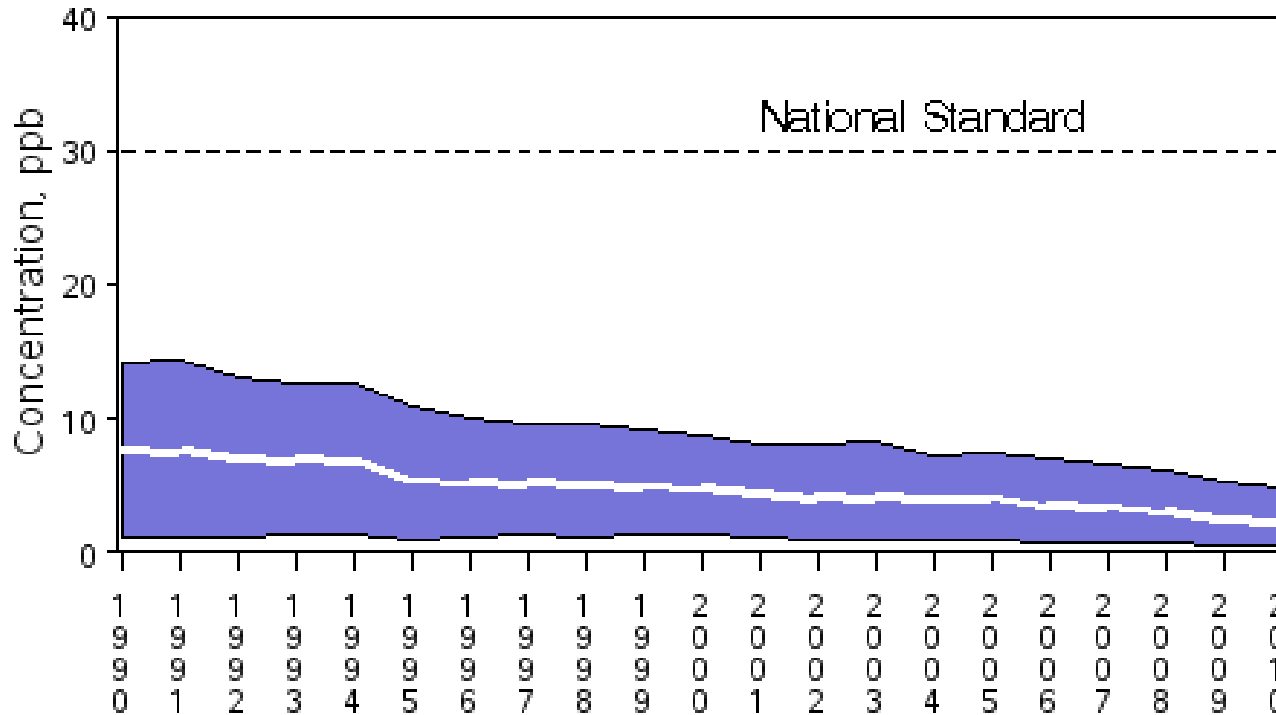
Air Quality Improving – National SO₂

Nationally, SO₂ emissions have been reduced by 75% since 1990.

SO₂ Air Quality 1990-2010

(Based on annual Arithmetic Average)

National Trend Based on 229 Sites



Air Quality Improving – Local SO₂

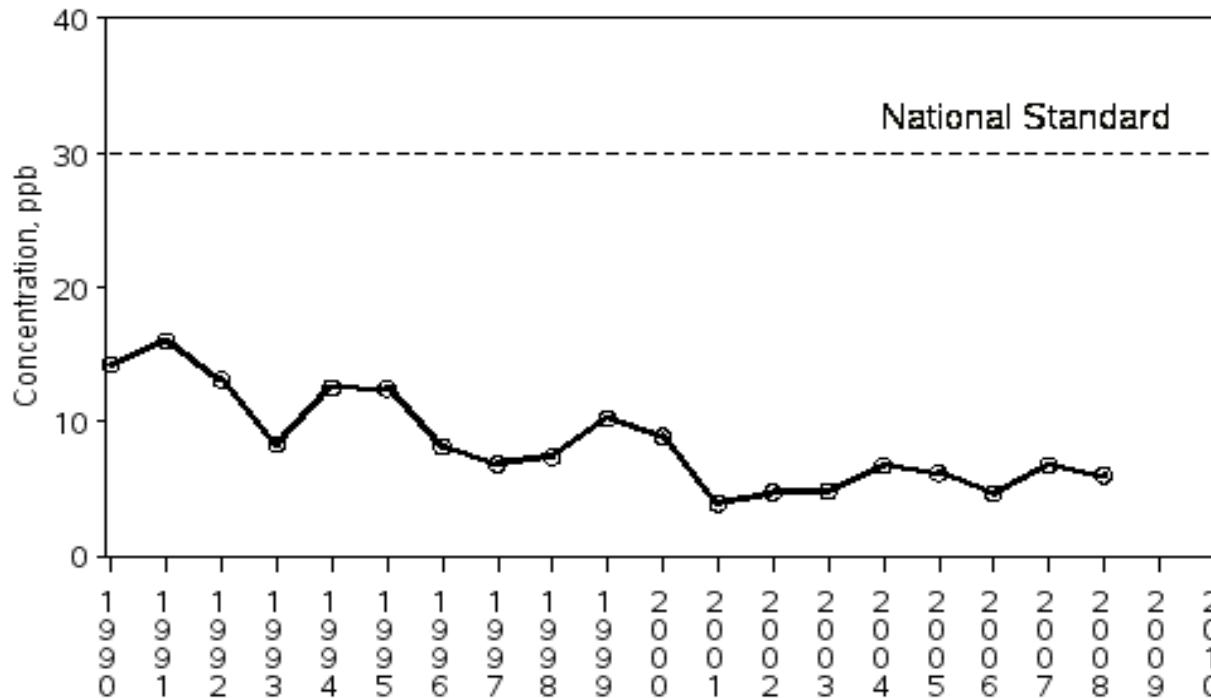
Locally, SO₂ emissions have also reduced by 57% since 1990.

SO₂ Air Quality 1990-2010

(Based on annual Arithmetic Average)

Muscatine county

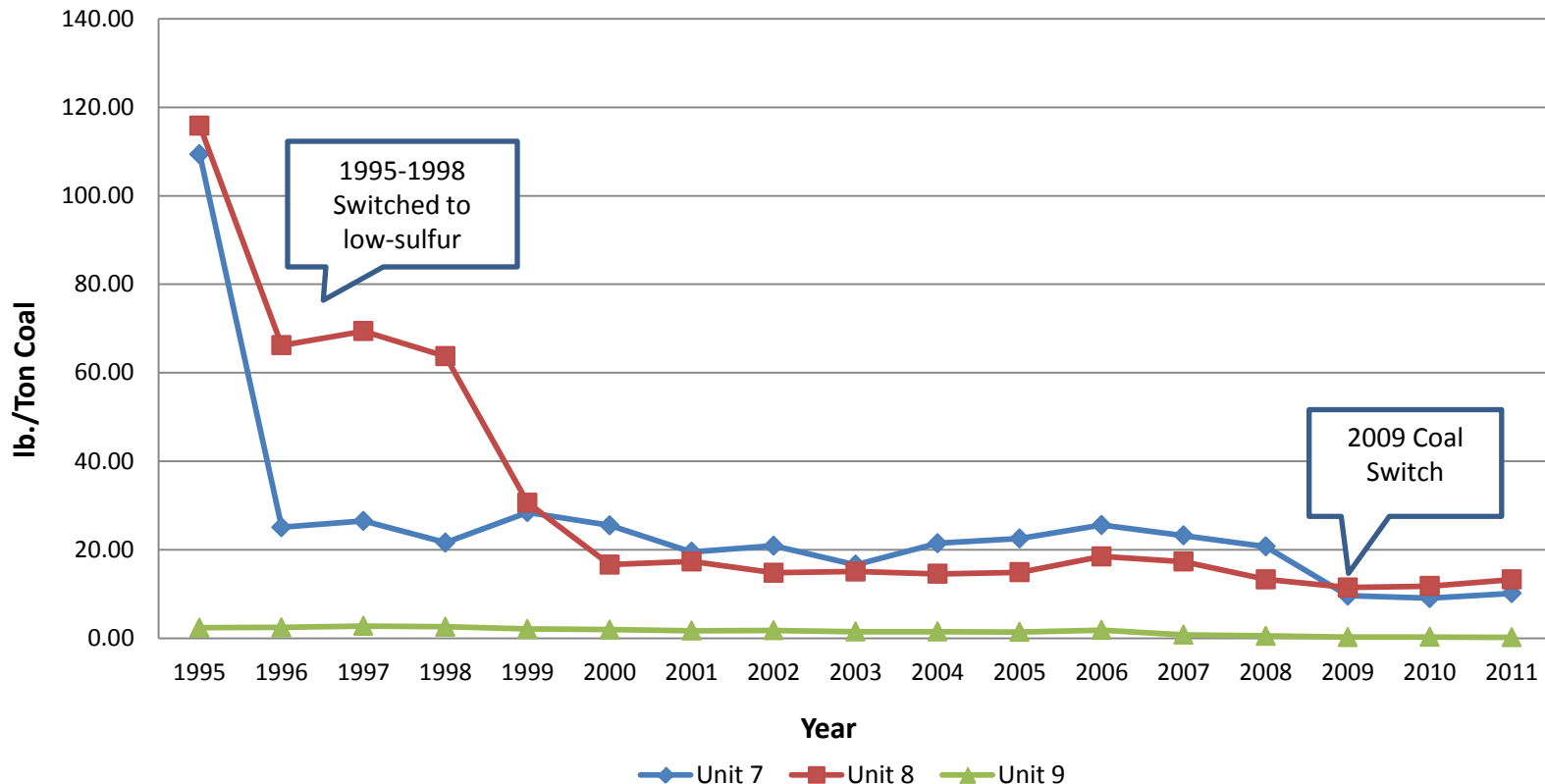
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Air Quality Improvements – MP&W

MP&W operates 3 units. Our newest unit (Unit 9) was built in 1983 with the first SO₂ scrubber in the state of Iowa. As technology improves, we adapt our units to take advantage of those innovations, which results in further reduced emissions.

Historic SO₂ Emissions by Unit



Looking Forward

Q

What is MP&W planning for the future?

A

MP&W is evaluating alternatives to comply with the new EPA regulations. Our strategy is to find the right mix of air pollution control technology and operating conditions which meet or exceed regulatory requirements and that minimize rate impacts on our customer/owners.

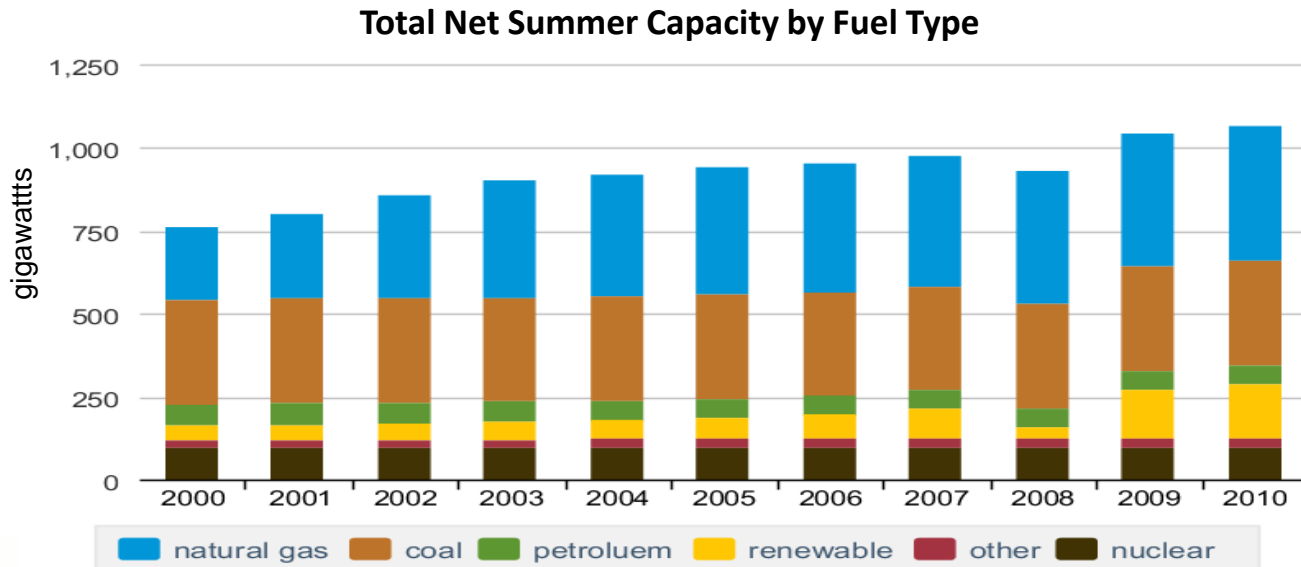
MP&W's coal-fired power plants provide affordable and reliable base load electricity supporting Muscatine residents and local industries. This is reliable 24/7 electricity that ensures the lights are on, water is hot, and computers are working, regardless of whether the sun is shining or the wind is blowing.

Looking Forward

Q Is MP&W pursuing renewable energy sources?

A The graph show that renewable energy is growing as a fuel type, and that coal and natural gas fuels provide critical base load energy regardless of weather. MP&W's generating units are fully paid for and can supply all our local energy needs far into the future.

We continue to investigate cost-effective renewable energy sources.



In Conclusion

- MP&W complies with changing environmental regulations.
- MP&W invests millions of dollars in emission control technology to continue reducing emissions.
- MP&W works cooperatively with IDNR and EPA in obtaining permits, and reporting data.
- MP&W successfully operates in compliance with our environmental permits.
- MP&W provides locally-generated, reliable electric power with low electric rates, benefitting the entire community.



THANK YOU

PLEASE SEE OUR OTHER PRESENTATIONS FOR MORE INFORMATION.



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