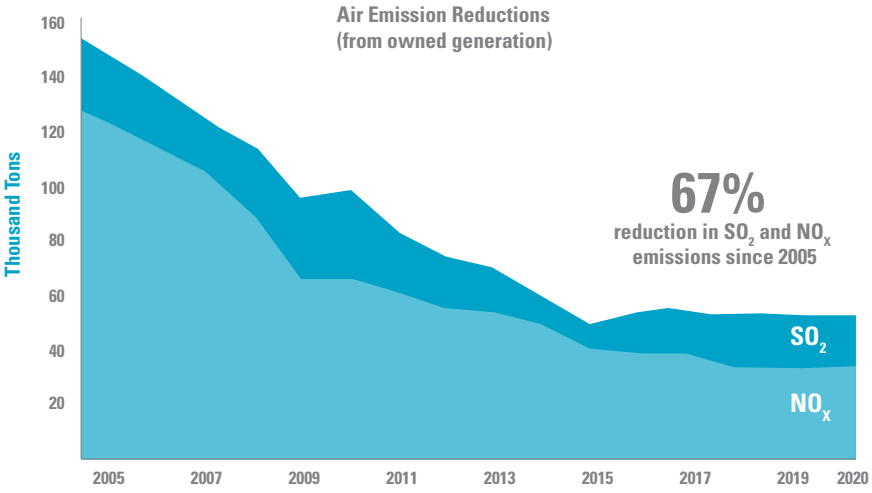
Protecting Air Quality



Our Approach

We continually evaluate our power plant operations and look for cost-effective opportunities to reduce emissions and stay ahead of clean air requirements. Our clean energy strategy includes comprehensive projects, such as Clean Air Clean Jobs in Colorado and the Metro Emissions Reduction Program in Minnesota that significantly reduce air emissions while transforming our fleet of generating plants for the future. Through these efforts, we have installed state-of-the-art emission controls on some plants while retiring and replacing aging coal plants with cleaner, more flexible natural gas. Natural gas-fueled plants have half the emissions of coal, but also operate more efficiently with variable wind and solar generation. As environmental regulations become more challenging, our proactive approach is proving cost effective for customers, helping us avoid the expense and disruption that others in our industry are experiencing as they work to meet new requirements.

Emissions Reduction Projects

We have a number of retirement, efficiency and emission control projects that are underway or were completed this past year which will reduce emissions and modernize our generating fleet.

Efficiency, Control and Retirement Projects 2015-2016

Location	Project Description	Completion Date
COLORADO		
Hayden Units 1-2	Clean Air Clean Jobs emission control project: Install selective catalytic reduction to reduce NOx	2015 (Unit 1 - complete) 2016 (Unit 2)
Cherokee Unit 3	Clean Air Clean Jobs emission reduction project: Retired in 2015	2015 (complete)
Cherokee Unit 4	Clean Air Clean Jobs emission reduction project: Switch fuel from coal to natural gas by yearend 2017	2017
Valmont Unit 5	Clean Air Clean Jobs emission reduction project: Retire by yearend 2017	2017
SOUTHWEST		
Harrington Units 1-3	Installed activated carbon injection systems for achieving the goal to reduce mercury emissions by 90 percent	2015 (complete)
Tolk Units 1-2	Installed of activated carbon injection systems for achieving the goal to reduce mercury emissions by 90 percent	2015 (complete)
UPPER MIDWEST		
Sherco Units 1-2	Optimized coal mill operations to reduce NOx emissions	2015 (complete)
Black Dog Units 3 and 4	Retired in second quarter 2015	2015 (complete)
Bayfront Unit 5	Ceased coal operations in 2015, switching operations to natural gas	2015 (complete)

Clean Air Clean Jobs

Xcel Energy worked with a coalition of policymakers and legislators to support the passage of Colorado's Clean Air-Clean Jobs Act in 2010. Under the legislation, we were directed to propose and implement a comprehensive plan for reducing emissions of nitrogen oxides by at least 80 percent from 900 megawatts of coal-fueled generation.

We are now nearing completion of our Clean Air-Clean Jobs project, which has been underway since 2011 after being approved by the Colorado Public Utilities Commission following extensive public review. In 2015, a new, highly efficient natural gas combined-cycle unit at our Cherokee Generating Station began operations. It will replace approximately 700 megawatts of coal-fueled generation scheduled for retirement by the end of 2017. Xcel Energy has now retired five aging coal units under the project, representing about 522 megawatts. Additionally, we are installing modern emission controls at two remaining coal plants, Pawnee and Hayden generating stations and will switch a fourth unit at Cherokee plant from coal to natural gas.

Once complete, the entire effort will reduce emissions of nitrogen oxides approximately 86 percent, sulfur dioxide by 83 percent and mercury by 82 percent from plants included in the project. System wide in Colorado, it will contribute to a projected reduction in carbon dioxide emissions of at least 35 percent by 2020 from 2005 levels.

Our Clean Air-Clean Jobs project is part of Colorado's State Implementation Plan to address Regional Haze. It also will help the state and Xcel Energy meet other upcoming environmental requirements, including the EPA's Clean Power Plan. The entire effort will cost approximately $1 billion and is estimated to have an average-annual rate impact of approximately 2 percent over a 10-year period.

Regulatory Developments

Interstate Air Quality
The Cross State Air Pollution Rule addresses long-range transport of particulate matter and ozone by requiring reductions in sulfur dioxide and nitrogen oxides from utilities in the eastern half of the United States using an emissions trading program. For Xcel Energy, the rule applies in Minnesota, Wisconsin and Texas. After extensive legal battles involving a number of states and industry, the EPA began administering the rule in 2015. We are complying with the rule.

Regional Haze and Visibility
The Clean Air Act may require power plants to install emission controls to reduce alleged haze and visibility impacts of sulfur dioxide, nitrogen oxides and particulate matter emissions on national parks and wilderness areas. The regional haze state implementation plans for Minnesota and Colorado have received final approval. Xcel Energy has completed all required emission reduction projects, except for the remaining Clean Air Clean Jobs projects that apply to Cherokee Unit 4, Valmont Unit 5 and Hayden Unit 2. These projects are underway and due to be completed by the end of 2017.

In January 2016, the EPA issued its final regional haze rule requiring reduced emissions at Texas power plants, with the goal of improving visibility in Guadalupe Mountains National Park in southwest Texas and Big Bend National Park in southern Texas. Xcel Energy's Tolk Generating Station near Muleshoe, Texas, is among the plants for which the EPA has prescribed new emissions controls through the rule. Under the final rule, Tolk is required to meet a new emissions limit for sulfur dioxide by February of 2021, based on the expected performance of dry scrubbers. Installing scrubbers on the plant is estimated to cost approximately $600 million.

Because this rule exposes our customers to significantly higher energy costs while producing very little, if any, improvement to visibility in national parks, we have taken legal action against the rule on behalf of our customers. We believe that the EPA failed to appropriately weigh the full impact and cost of its plan against the benefits. We expect this issue to be decided in late 2017 to early 2018.

The EPA is currently evaluating Best Available Retrofit Technology (BART) in relation to visibility at Class I protected areas in Texas and neighboring states. The agency recently issued an information request to Xcel Energy asking for a list of BART eligible units, which means a further analysis of the impacts to visibility may be required of these units. EPA is expected to issue a proposed rule by December of 2016.

Ozone
Ozone, commonly referred to as smog, is formed from the reaction of nitrogen oxides (NO_x) and volatile organic compounds (VOCs) in the presence of sunlight. Ozone levels are highest in the summer months. In October of 2015, the EPA finalized a new ozone standard of 70 ppb. The impacts of this new standard are as follows:

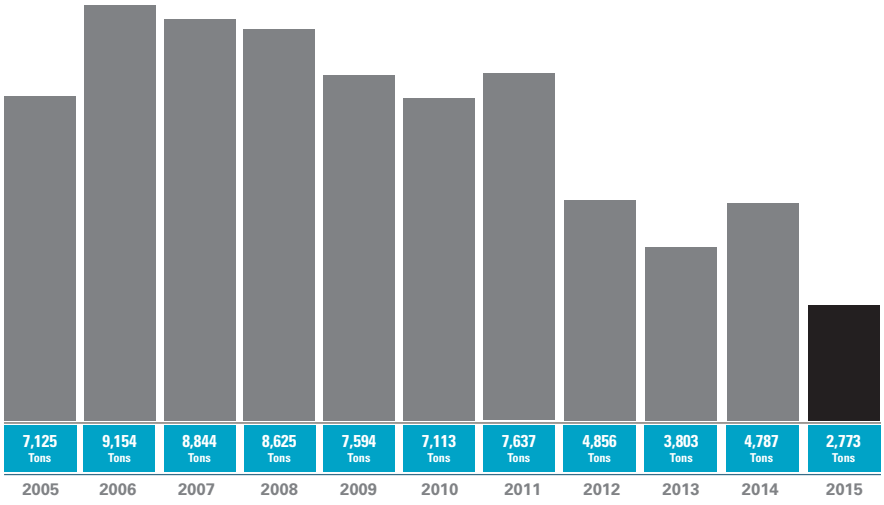
- **Upper Midwest:** We expect that areas where we operate in Minnesota and Wisconsin will be in attainment with the ozone standard of 70 parts per billion. The Allen S. King Generating Station is equipped with state-of-the-art selective catalytic reduction equipment for controlling NOx. The three units at the Sherco Generating Station are equipped with low-NOx burners. We have reduced NOx at our Minnesota coal-fueled plants by more than 65 percent since 2005.

- **Colorado:** With an ozone standard of 70 parts per billion, we expect that portions of Colorado will continue to be in non-attainment for ozone. The new standard may slightly increase the size of the current Denver Metro nonattainment area and potentially adds some new nonattainment areas on the Western Slope near Grand Junction and Durango. Reducing NOx was a primary driver of Colorado's Clean Air-Clean Jobs Act. Under the act, Xcel Energy is implementing a plan that will reduce NOx by 86 percent, compared to 2008 levels, from the units involved. We are retiring six aging coal units and replacing the power through a new, more efficient combined-cycle natural gas plant at Cherokee Generating Station. We also have installed state-of-the-art selective catalytic reduction equipment for controlling NOx at Pawnee Generating Station, and are completing installation of selective catalytic reduction equipment on the two units at Hayden Generating Station.

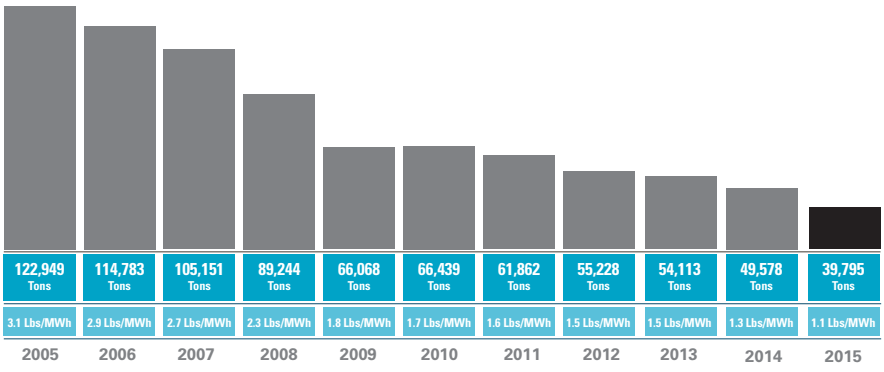
- **Southwest:** We expect that areas where we operate in Texas and New Mexico will be in attainment with an ozone standard of 70 parts per billion. Randall County is currently close to and within the standard using current data. Future data, as reviewed by the EPA, will determine attainment status during the designation process. The EPA currently projects that this area will meet the new ozone standard. All of the units at our two coal-fueled plants in Texas—Harrington and Tolk—are equipped with low-NOx burners and use advanced neural networks that continually adjust operations to achieve efficiency and reduce emissions.

Air Emission Reductions

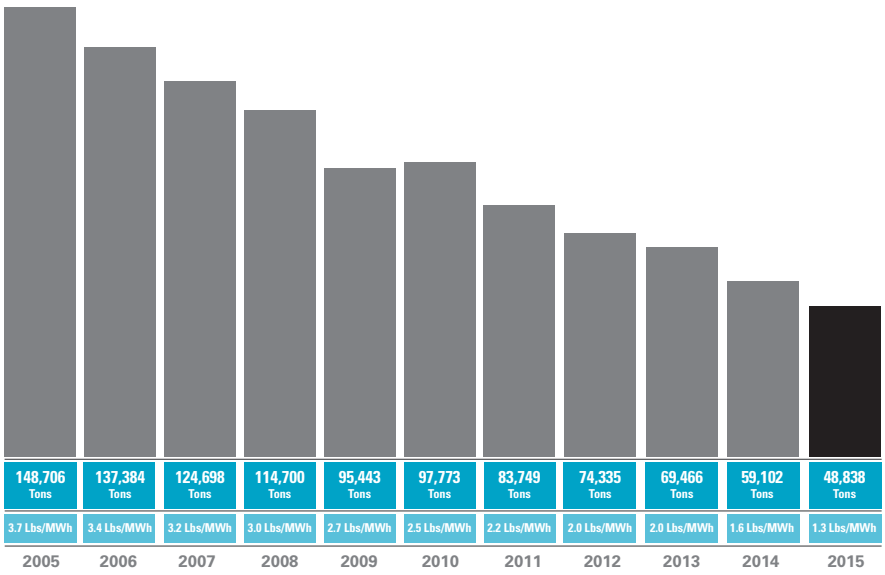
Xcel Energy has reduced emissions of nitrogen oxides and sulfur dioxide by approximately 67 percent since 2005.



Particulate Matter Emissions (owned generation)



Nitrogen Oxide Emissions (owned generation)



Sulfur Dioxide Emissions (owned generation)