Reducing Local Emissions

Through our clean energy leadership, we improve air quality and contribute to a better environment for the people and communities we serve.

Xcel Energy's clean energy journey began decades ago when we started engaging with environmental agencies and other stakeholders to help address state and regional air quality issues in the places we serve. Power plants, along with manufacturing and other industries, play a role in air quality as do transportation and population growth.

For over half a century, we have operated coal-fueled power plants that provide customers with low-cost, reliable electricity. We were among the first to install state-of-the-art emissions controls on the plants and then began early retiring or converting them to natural gas. Our comprehensive clean air projects served as national models for how power providers could support state and local air quality plans, while maintaining reliable, affordable power for customers.

Today, our plans go much further and set the path for serving our customers with unprecedented amounts of wind and solar energy and retiring our coal operations by 2034. Because the energy we deliver now, and in the future, is significantly cleaner, that power can do even more. By encouraging the use of clean electricity in applications, such as transportation, we support cleaner air and a better environment by reducing emissions in other sectors of the economy.

Governance
The Operations, Nuclear, Environmental and Safety (ONES) Committee of the board of directors oversees all operational aspects, which involves annually reviewing the company's environmental strategy, compliance performance and initiatives, including emissions reductions. Within Xcel Energy, the senior vice president of Energy Supply is responsible for the company's air emissions strategy and compliance, under oversight of the chief operations officer who reports to the CEO.

Highlights

- From 2005 through 2021, we reduced carbon emissions 50% and remain on track to achieve our interim goal of reducing carbon emissions 80% by 2030 from 2005 levels. Learn more about our vision to become a net-zero provider of all the energy our customers use—electricity, heating and transportation—in the **Leading the Clean Energy Transition brief** in Xcel Energy's Sustainability Report.

- Company-wide we continued to decrease emissions compared to 2005 including sulfur dioxide and nitrogen oxides by 82%, mercury by 91%, lead by 77%, and particulate matter by 75%.

- In our latest reporting under the EPA's Toxics Release Inventory program, we reduced releases more than 50% from 2005 levels because we generated less electricity with coal during the reporting period. In a typical year, our TRI releases are approximately 35% lower compared to 2005.

- In addition to reducing carbon emissions, our goal to power 1.5 million electric vehicles is expected to help improve ground-level ozone in our states by reducing nitrogen oxide emissions by almost 1,500 tons and fine particulate matter by more than 270 tons annually by 2030.

- Our company fleet includes 130 electric sedans—a more than 40% increase compared to 2020 as we replace existing vehicles. We estimate the fleet avoided more than 27 tons of carbon emissions in 2021, as well as other tailpipe emissions.

- Through our new hybrid flexible work program, eligible employees have the option of working on-site part of their work schedules and telecommuting the rest, reducing trips to and from work. Xcel Energy also offers discounted mass transit passes for employees at our two largest employee locations. Both programs support local community goals to improve air quality and reduce carbon emissions.

Environmental Justice

Environmental justice is the engagement, fair treatment and meaningful involvement of all people regardless of race, color, national origin or income in the development and implementation of energy, climate and environmental initiatives, according to the federal government.

As an energy provider, we provide an integral service to our communities and are positioned to further environmental justice in those communities. Our company is committed to providing meaningful opportunities for all people to participate in the energy decisions that impact them.

We live this commitment by:

- Encouraging inclusion and community partnerships
- Leading the clean energy transition and reducing environmental impact
- Managing energy affordability and reliability, which are vital to customer safety, security and well-being

Xcel Energy's **Position Statement on Environmental Justice** describes how our company will consider environmental justice in our energy, climate and environmental initiatives and how we strive to provide meaningful opportunities for affected communities to participate in the process of considering energy, climate and environmental initiatives that impact them.

Find information on our public outreach and involvement practices for planning and locating energy facilities in the **Community Relations and Economic Development brief** in Xcel Energy's Sustainability Report.

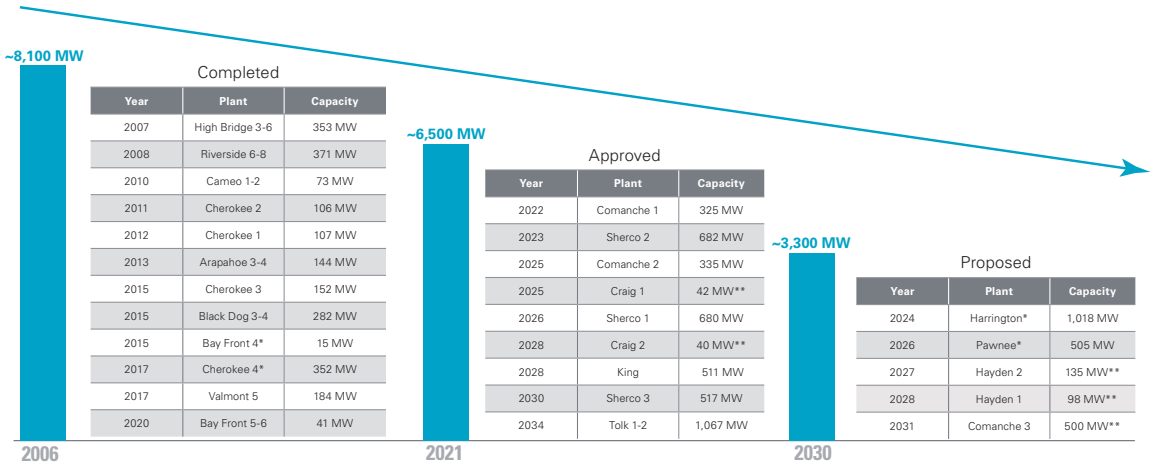
Our Clean Energy Transition: Local Environmental and Community Benefits

Transitioning from Coal-Fueled Electricity

Xcel Energy's predecessor companies began building coal-fueled power plants in the 1900s to provide electricity to growing communities. In the early days, the plants were considered engineering marvels and significantly improved people's lives, powering all kinds of modern conveniences, from electric washing machines to toasters. They were located close to customers in downtown and urban areas or near critical infrastructure, like railroads and rivers or other water resources.

In the 1980s, we started installing new emissions controls on the plants, and by the early 2000s, we engaged with environmental agencies, utility regulators and stakeholders to advance comprehensive plans for significantly reducing emissions by early retiring or repowering coal-fueled plants with natural gas. Under the Minnesota Metro Emissions Reduction Project completed in 2009, we repowered two of our oldest coal plants in the Twin Cities to natural gas. We also retired two coal plants in Colorado and repowered a third coal plant to natural gas under our Clean Air Clean Jobs Plan completed in 2017.

Xcel Energy has plans to retire or repower all remaining coal-fueled plants, ahead of their scheduled retirement dates.



Completed

Year	Plant	Capacity
2007	High Bridge 3-6	353 MW
2008	Riverside 6-8	371 MW
2010	Cameo 1-2	73 MW
2011	Cherokee 2	106 MW
2012	Cherokee 1	107 MW
2013	Arapahoe 3-4	144 MW
2015	Cherokee 3	152 MW
2015	Black Dog 3-4	282 MW
2015	Bay Front 4*	15 MW
2017	Cherokee 4*	352 MW
2017	Valmont 5	184 MW
2020	Bay Front 5-6	41 MW

Approved

Year	Plant	Capacity
2022	Comanche 1	325 MW
2023	Sherco 2	682 MW
2025	Comanche 2	335 MW
2025	Craig 1	42 MW**
2026	Sherco 1	680 MW
2028	Craig 2	40 MW**
2028	King	511 MW
2030	Sherco 3	517 MW
2034	Tolk 1-2	1,067 MW

Proposed

Year	Plant	Capacity
2024	Harrington*	1,018 MW
2026	Pawnee*	505 MW
2027	Hayden 2	135 MW**
2028	Hayden 1	98 MW**
2031	Comanche 3	500 MW**

*Conversion from coal to natural gas
**Based on Xcel Energy's ownership interest

Early coal plant retirements produce significant environmental benefits for communities near the plants. We are lowering or eliminating air emissions, reducing carbon dioxide emissions and cutting waste and water consumption from the facilities.

Some of the coal-fueled plants Xcel Energy has early retired or converted to natural gas were in or near neighborhoods with a higher index for environmental justice, as determined by **EPA's environmental mapping and screening tool** that provides consistent environmental and demographic information for communities across the country. We have reduced the emissions and waste produced from the plants in those communities as shown in the table below.

Community Emissions Reductions from Xcel Energy Power Plants (from 2005 levels)

Sulfur Dioxide	Nitrogen Oxides	Mercury	Particulate Matter	Coal Ash
Arapahoe Station: South Denver				
100%	100%	100%	100%	100%
Cherokee Station: North Washington Neighborhood in Denver				
100%	95%	100%	77%	100%
Riverside Station: Marshall Terrace Neighborhood in Minneapolis				
100%	99%	100%	99%	100%
High Bridge Station: West Seventh Neighborhood in St. Paul				
100%	99%	100%	99%	100%

Pueblo, Colorado, is another community with a higher demographic index according to EPA. When Comanche Units 1 and 2 shut down in 2022 and 2025, we expect to achieve the following emissions reductions compared to 2021 levels: sulfur dioxide 51%, nitrogen oxides 69%, mercury 39%, particulate matter 42% and coal ash 46%. Under our Colorado Clean Energy Plan, the last unit at the Comanche Plant is proposed to retire no later than Jan. 1, 2031.

Retiring coal-fueled plants can also have economic impacts for host communities and workers. To help ease this transition, we provide advance notice of closures and work closely with our employees and communities to help them prepare for and manage the change.

Find Xcel Energy's **Position Statement on Transitioning Out of Coal Responsibly** and learn more about our current efforts to manage the transition for communities and workers in the **Community Relations and Economic Development brief** in Xcel Energy's Sustainability Report.

Natural Gas-Fueled Generation

We are steadily shifting how we produce power for customers, adding unprecedented amounts of variable wind and solar power to our system. To take full advantage of times when the sun shines or wind blows, we are ramping up or down coal-fueled and nuclear generating plants. We also have invested in highly flexible natural gas-fueled generation, which is the most efficient energy source currently available for backing up our growing renewable portfolio and balancing the system with significantly fewer emissions.

Natural gas plants can be quickly dispatched. Plus, they have less than half the carbon emissions compared to coal and emit five times less nitrogen oxides and virtually no sulfur dioxide, mercury or particulate matter. Additionally, many of our gas plants are equipped with state pf the art controls to further reduce nitrogen oxides using Selective Catalytic Reduction (SCR), low NOx burners and Separated Over Fired Air (SOFA). These various controls can be used independently or in sequence to greatly reduce nitrogen oxides by 90% or more.

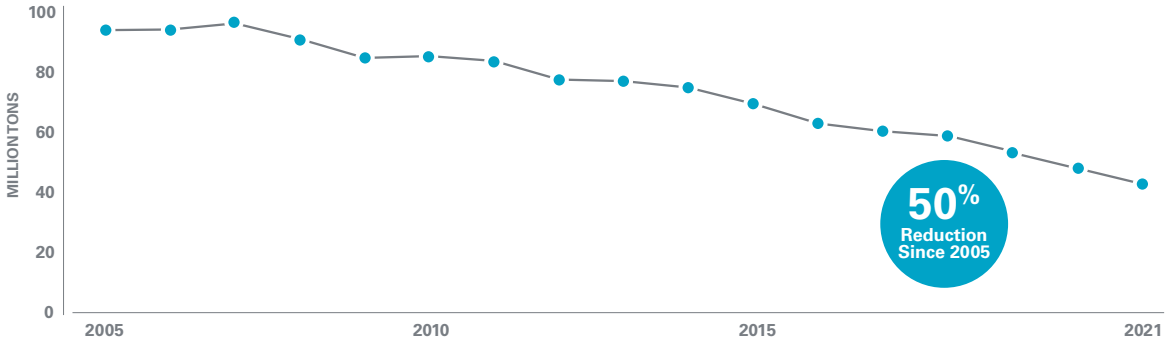
As we invest in natural gas-fueled generation, we are doing so in ways that provide flexibility for the future. For example, in the Upper Midwest, we modified a proposal to use smaller natural gas facilities in separate locations throughout the region to maintain power grid reliability and stability, rather than one large, new natural gas-fueled plant. We also plan to install new combustion turbines that are hydrogen ready, looking ahead to when hydrogen fuel is available.

Learn about our renewable energy portfolio in the **Renewable Energy brief** and our clean energy strategy in the **Leading the Clean Energy Transition brief** in Xcel Energy's Sustainability Report.

Air Emissions Reporting

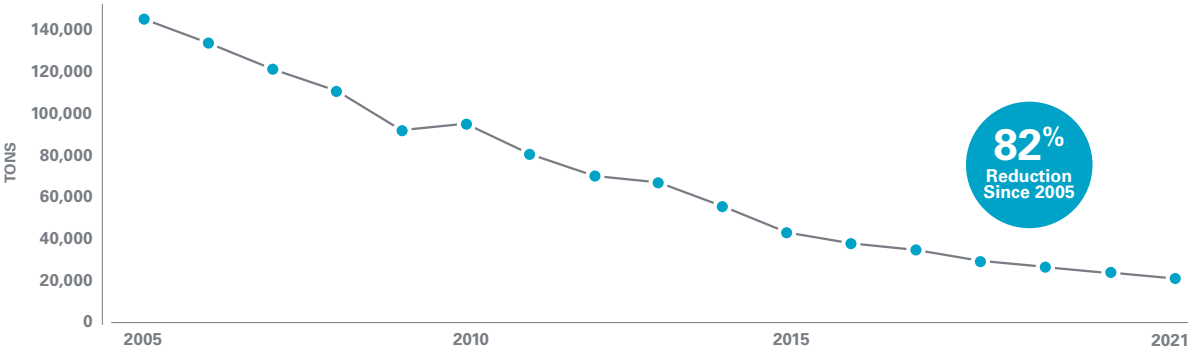
The following graphs show our progress reducing emissions since 2005. We provide additional emissions reporting for Xcel Energy and each of its operating systems in the **Data Summary** for Xcel Energy's Sustainability Report.

Carbon Dioxide from Electricity Serving Customers (Owned and Purchased Generation)

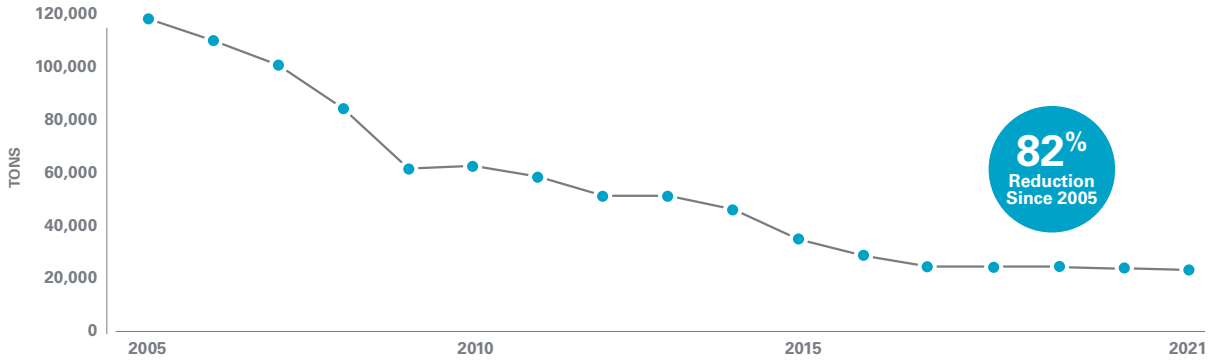


We report on our clean energy transition and vision to deliver 100% carbon-free electricity by 2050 in the **Leading the Clean Energy Transition brief** in Xcel Energy's Sustainability Report.

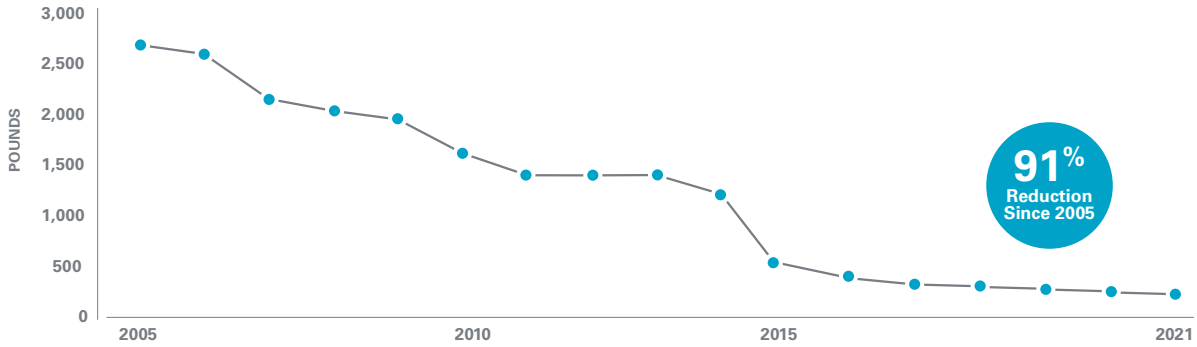
Sulfur Dioxide from Electricity Serving Customers (Owned Generation)



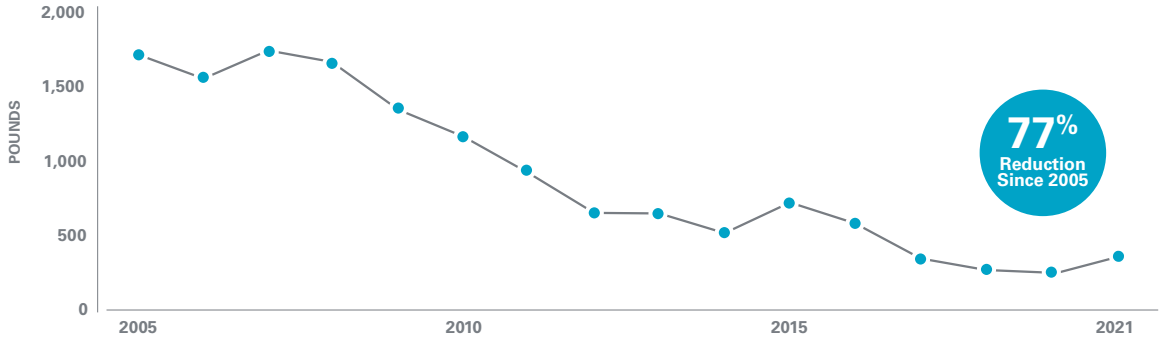
Nitrogen Oxides from Electricity Serving Customers (Owned Generation)



Mercury from Electricity Serving Customers (Owned Generation)



Lead from Electricity Serving Customers (Owned Generation)



Particulate Matter from Electricity Serving Customers (Owned Generation)

Community Right to Know and the Toxics Release Inventory Program

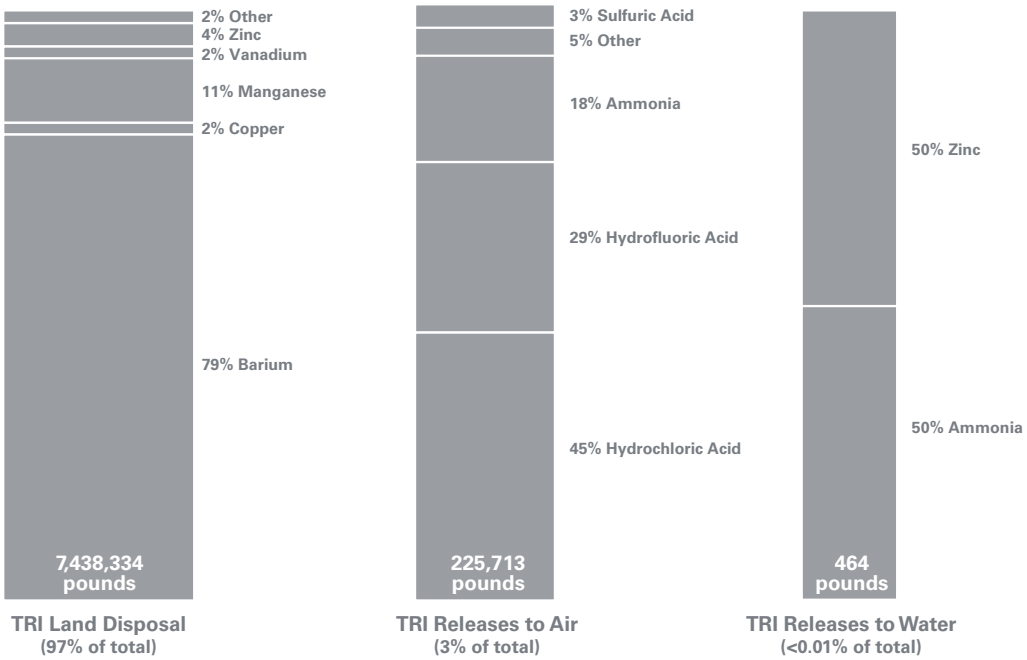
The EPA has administered the Emergency Planning and Community-Right-to-Know Act (EPCRA) since 1986. The program is intended to help communities protect residents from potential chemical hazards. Under EPCRA, residents have the "right to know" about chemicals in their communities. Each year, facilities in specific industries that manufacture, process or use the nearly 650 substances identified under the program must report their releases to air, land and water. The EPA manages the information in a publicly available database under the Toxics Release Inventory (TRI) program.

Xcel Energy supports this type of reporting and has participated since 1999 when the program was expanded to include electric utilities. We annually report our releases to EPA, which are the result of using coal, oil and refuse-derived fuel (processed municipal solid waste) to produce electricity. When these fuels are combusted, they release trace amounts of TRI reportable substances, including barium, chromium, copper, lead, manganese, mercury, nickel and zinc.

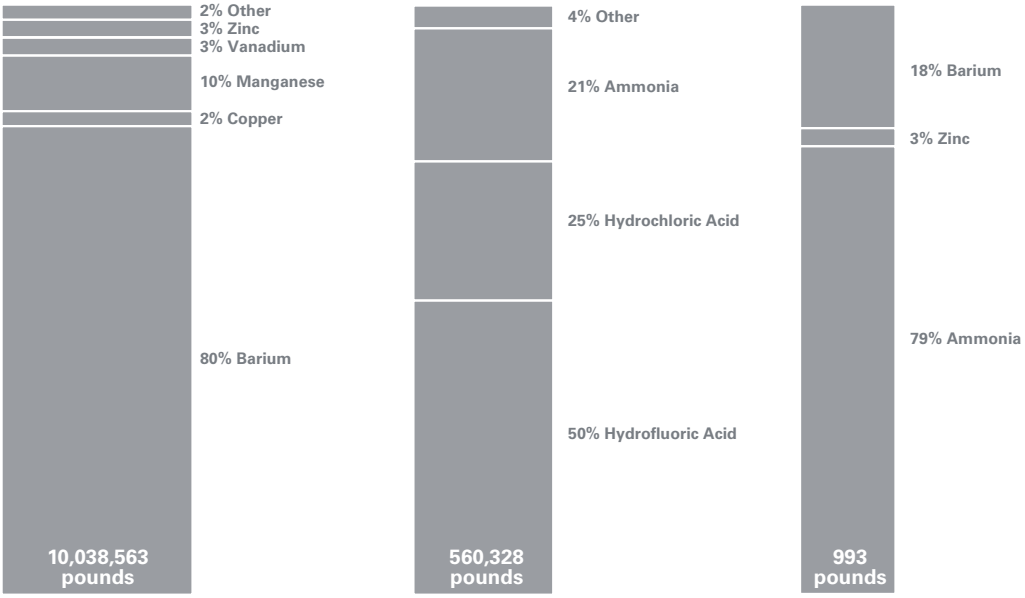
TRI reportable substances are reported by facility and release type—land, air and water. A facility's releases may change slightly from year to year based on the amount of electricity produced and the associated fuel that is consumed, as well as the fuel composition and mineralogy.

Most of our TRI reportable substances are controlled at our facilities as part of the coal ash where they are contained, preventing them from entering the air. We capture about 95% of these substances and safely dispose of them in managed landfills.

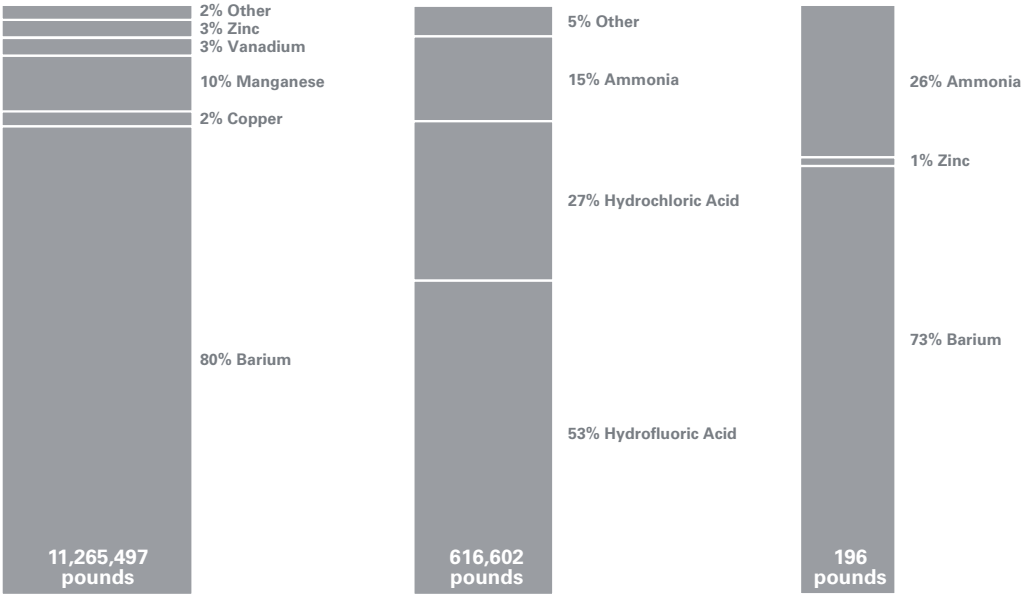
2020 TRI Releases



2019 TRI Releases



2018 TRI Releases



Releases provided here are from nine generating plants in locations throughout our service area. For individual plant information visit the **EPA's TRI Explorer website** or contact **corporateresponsibility@xcelenergy.com**.

Legacy Manufactured Gas Plant Projects

In the late 1800s until the mid-1900s, gas was manufactured using coal, oil and petroleum. It was used as natural gas is today, primarily for heating, cooking and street lighting. EPA estimates that thousands of manufactured gas plants or MGP facilities operated in the United States between 1815 and 1960. They were owned by municipalities and corporations, including predecessor companies to today's natural gas and electric utilities. MGPs produced a variety of wastes and byproducts, including coal tar. Some of the waste and byproducts were sold for reuse or disposed off-site and some were left at plant sites.

Given the extensive history of our operating companies, going back more than 150 years, Xcel Energy has inherited legacy MGP sites. All the plant facilities were closed and dismantled many years ago, and some of the properties where MGPs once operated have been sold. Over the years, Xcel Energy has worked cooperatively with environmental agencies and communities to successfully investigate and remediate former MGP sites when necessary.

Additional details on legacy manufactured gas plants and current projects are available on **xcelenergy.com/mgp**.