



# Reducing Air and Other Emissions

Through our clean energy leadership, we're helping improve air quality for local communities.

Xcel Energy's clean energy journey originated decades ago through our collaboration with state and federal environmental agencies and other stakeholders to help address state and regional air quality issues. Power plants, along with transportation and manufacturing, all play a role in air quality, as do other industries and population growth.

For over half a century, we've operated coal-fueled power plants that provide customers with low-cost, dependable electricity. To steadily reduce emissions from the plants, we installed state-of-the-art emissions controls, such as baghouses, scrubbers and low-NOx burners. We also began early retiring or repowering coal plants with natural gas under innovative, comprehensive air quality initiatives including Colorado Clean Air Clean Jobs and the Minnesota Metro Emissions Reduction Project. Both served as national models for supporting state and local air quality plans, while ensuring our ability to provide reliable, affordable power for customers.

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## Governance

The Operations, Nuclear, Environmental and Safety Committee of the board of directors oversees all operational aspects, including our environmental strategy and performance. The committee annually reviews the company's environmental strategy, compliance, performance issues and initiatives, including Xcel Energy's air emissions strategy and compliance. 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 generation officer who reports to the chairman and CEO.

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Now, under our vision to deliver 100% carbon-free electricity by 2050 and goal to reduce carbon emissions 80% by 2030, we're making even greater changes to the power we provide. If regulators approve our proposed plans, we will completely close our coal operations by 2034. While we continue to add unprecedented amounts of wind and solar energy to our system, natural gas generation is needed to achieve our goals, reliably and affordably. It's the only resource available today that can enable our growing renewable portfolio and help balance the system with significantly fewer emissions compared to coal.

Through cleaner electricity, we can also reduce emissions from transportation. We're committed to powering 1.5 million electric vehicles in our service area by 2030. To make this possible, we're rolling out programs that will allow everyone in our communities to experience the benefits of electric transportation, whether they own an electric vehicle (EV), take electric transit, or benefit from improved air quality.

In addition to cutting carbon emissions, our EV plans are expected to improve ground-level ozone by reducing nitrogen oxide emissions by almost 1,500 tons and fine particulate matter by more than 270 tons annually by 2030. It's one more way we can help our communities achieve their own clean energy and environmental goals.

## HIGHLIGHTS

- From 2005 through 2020, we reduced carbon emissions approximately 51% from the electricity provided to customers. This puts us over halfway to delivering 100% carbon-free electricity by 2050.
- Company-wide we continued to decrease emissions compared to 2005 including sulfur dioxide by 87%, nitrogen oxides by 83%, mercury by 93%, lead by 82%, and particulate matter by 81%.
- Under the EPA's Toxics Release Inventory program, we have reduced releases by approximately 35%, compared to 2005 levels.
- The Colorado Department of Public Health and Environment through its Environmental Leadership Program recognized Xcel Energy as a Gold Leader for the company's comprehensive Environmental Management System as well as its clean energy leadership and environmental stewardship.
- We no longer use coal as a backup fuel at the Bay Front biomass power plant in Ashland, Wisconsin, since the last shovel of coal was burned in the plant's boilers in 2020. An \$18 million modernization project completed in 2015 made Bay Front one of the cleanest biomass power plants in the country. Under the project, we improved air quality and boiler control systems and reduced the need to use coal as a supplemental fuel. Moving forward, we plan to use natural gas as a backup fuel to biomass if needed and are working closely with fuel suppliers to operate on nearly 100% biomass.
- Working cooperatively with the Texas Commission on Environmental Quality, we've agreed to convert Harrington Generating Station, located northeast of Amarillo, from coal to natural gas by 2025. The conversion will help Potter County meet federal air quality requirements by reducing sulfur dioxide emissions from the plant and is expected to deliver fuel savings to customers.
- As part of our vision to power 1.5 million EVs by 2030 within our service areas, we've committed to transitioning our own fleet. We plan on electrifying all sedans by 2023, electrifying all light-duty vehicles by 2030, and having 30% of our medium- and heavy-duty vehicles electrified by 2030. By the end of 2020, we had 76 plug-in hybrid electric vehicles, which we estimate avoided nearly 123 metric tons of carbon emissions for the year.
- We offer discounted mass transit passes for employees at our two largest employee locations. With approximately 1,300 employees using the discounts in 2020, the program supports local community goals to improve air quality and reduce carbon emissions.

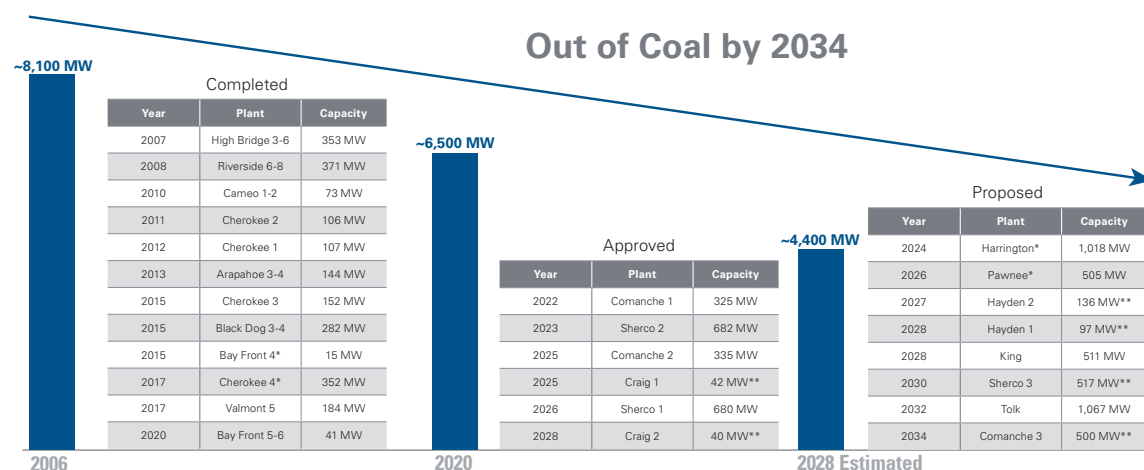
## Our Clean Energy Transition: Local Environmental and Community Benefits

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 washing machines to toasters. They were located close to customers in downtown and urban areas or near critical infrastructure, like railroads, power lines and rivers or other water resources.

In the early 2000s, we began proposing comprehensive plans to significantly reduce emissions by early retiring or repowering aging coal-fueled power plants. Under the Minnesota Metro Emissions Reduction Project completed by 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.

Over the past decade, there’s been a steady shift in how we produce power for customers. We’re significantly increasing the use of wind and solar power and operating our system around these resources. This means ramping up or down our natural gas, nuclear and coal plants to take advantage of times when the sun shines or wind blows, and by doing so, we use less coal and other fuel. Natural gas plants are an especially efficient backup to renewable energy because they can be dispatched quickly. Plus, natural gas has less than half the carbon emissions compared to coal, emits five times less nitrogen oxide, and emits virtually no sulfur dioxide, mercury or particulate matter.

**Going forward, Xcel Energy has plans approved or proposed to retire or repower all remaining coal-fueled plants by 2034, ahead of scheduled plant retirements dates.**



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

Early coal plant retirements produce significant environmental benefits for our communities and residents living near the plants. We are lowering or eliminating emissions, which improves local air quality, along with cutting carbon emissions and reducing waste and water consumption from the facilities.

Retiring some of our legacy coal-fueled plants has also reduced emissions in several communities with lower than average income levels, according to census information. We estimate that of our total emissions reductions since 2005, the following emissions reductions occurred in these communities: sulfur dioxide by 93%, nitrogen oxides by 89%, mercury by 92%, lead by 93%, and particulate matter by 92%.

While there are environmental benefits associated with coal plant closures, the local community may experience employment and other economic impacts when plants close. To help ease this transition, we work with our employees and communities affected by the change in advance of closures to help them prepare for and manage the transition. We also engage with communities and other stakeholder on future uses for plant sites, as appropriate. Some examples of plant properties that serve a new purpose include:

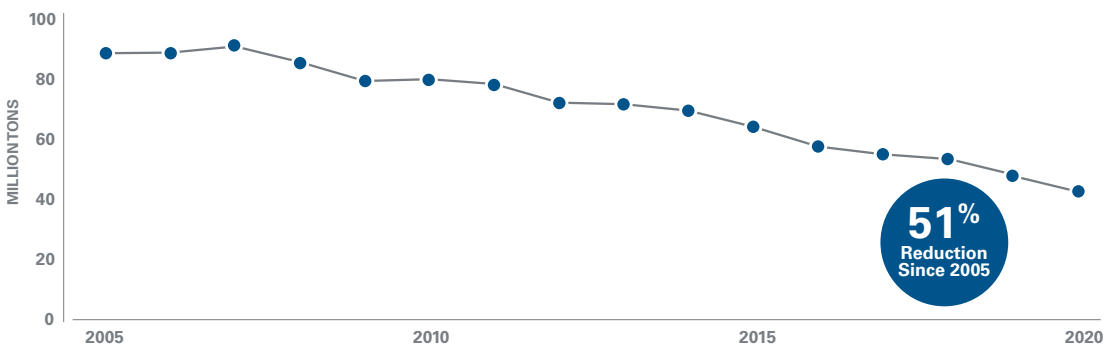
- The site of the former coal-fueled High Bridge plant is now a seven-acre off-leash dog park that overlooks downtown St. Paul, Minnesota, next to the Mississippi River. We worked with community partners to turn the property over to the city’s parks department under a no-cost lease arrangement.
- Xcel Energy helped support legislation that made it possible for Colorado Parks and Wildlife Division to develop a national sport shooting and education complex on the property of the former Cameo Generating Plant. Xcel Energy and Snowcap Coal sold the property to the Town of Palisade and Colorado Parks and Wildlife Division to open the facility, which is considered Colorado’s premier shooting and education facility. The complex attracts visitors from all around the state and region, benefitting the local economy.
- The former Valmont and Arapahoe plant properties are home to three Xcel Energy solar gardens built specifically to serve income-qualified customers. The projects are part of a partnership between the company, Pivot Energy, local municipalities and Energy Outreach Colorado, a nonprofit organization supporting low-income energy consumers.

Learn more about our public outreach and involvement for planning and siting energy facilities and how we are managing the responsible transition for communities and workers in the [Community Relations and Economic Development brief](#) in Xcel Energy’s Sustainability Report.

### Air Emissions Reporting

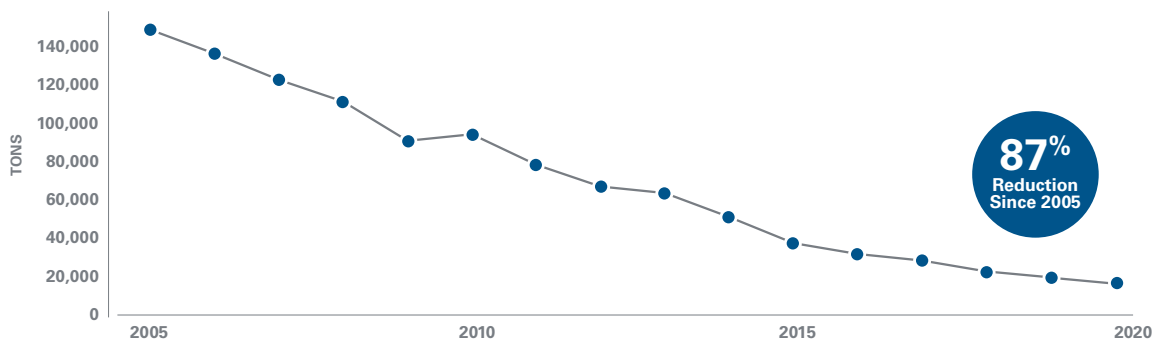
The following graphs show our progress reducing emissions since 2005. We provide additional emissions reporting for Xcel Energy and each of its operating systems in the [Data Summary for Xcel Energy’s Sustainability Report](#).

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

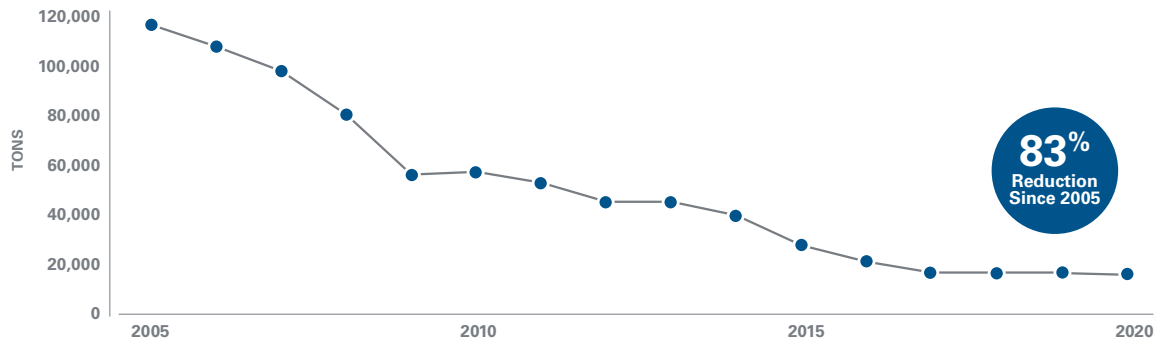


We report on our clean energy transition and vision to deliver 100% carbon-free electricity by 2050 in the [Leading the Clean Energy Transition brief](#) in Xcel Energy’s Sustainability Report.

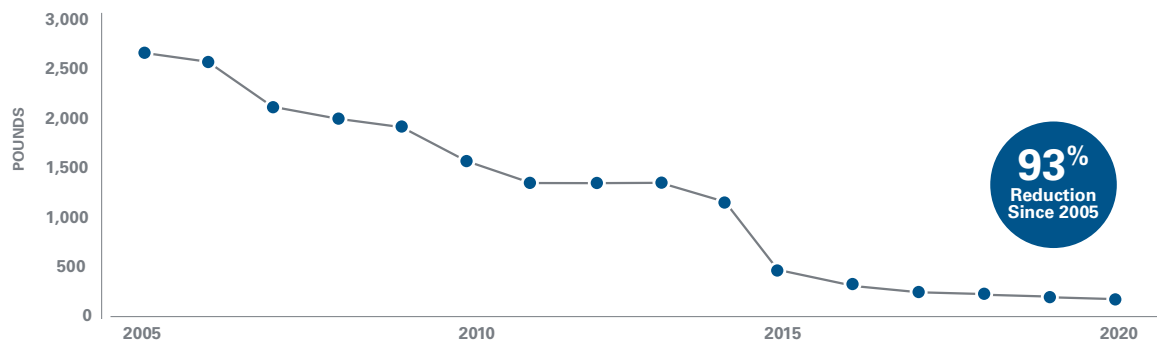
#### Sulfur Dioxide from Electricity Serving Customers (Owned Generation)



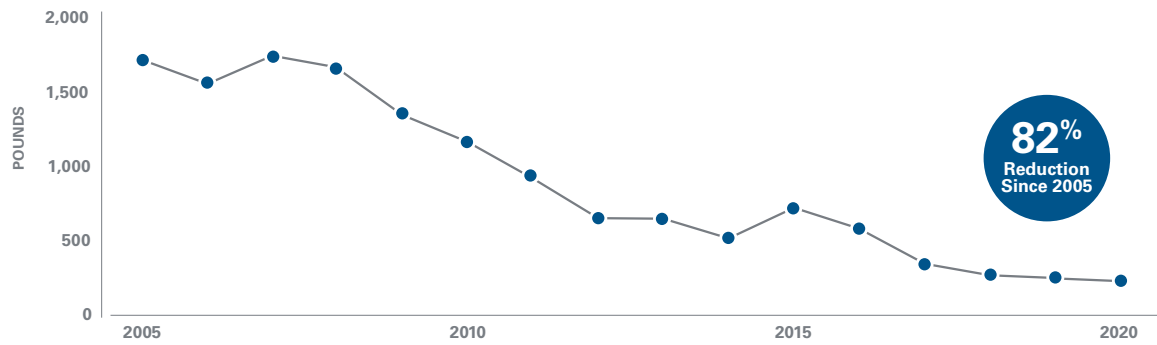
### Nitrogen Oxides from Electricity Serving Customers (Owned Generation)



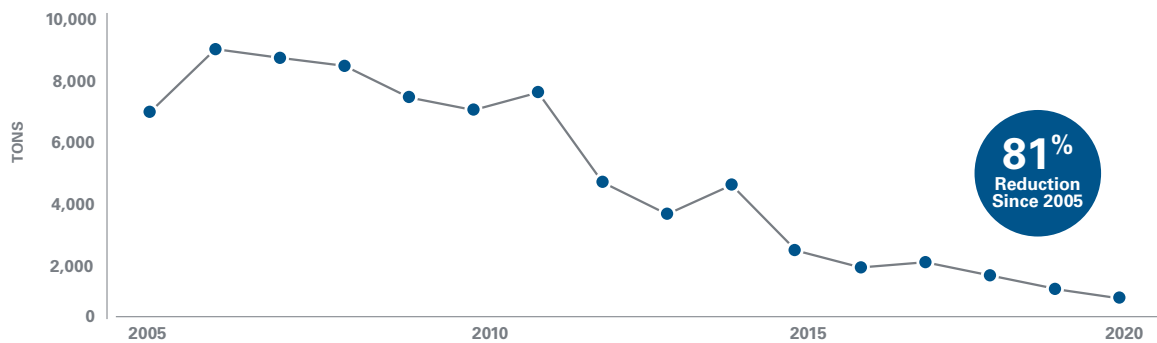
### Mercury from Electricity Serving Customers (Owned Generation)



### 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

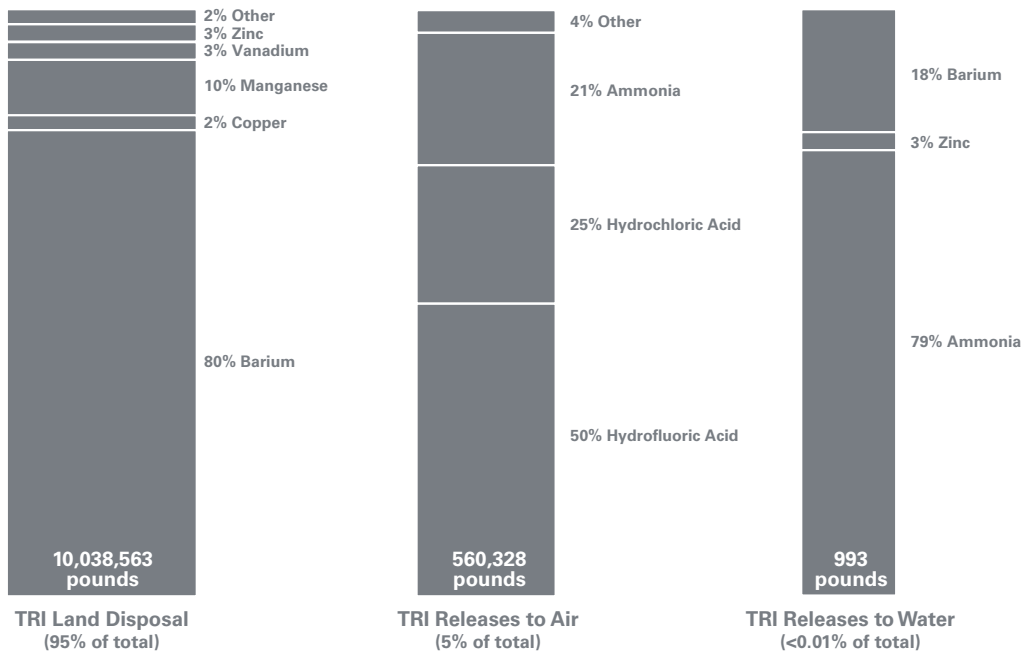
The EPA has administered the Emergency Planning and Community-Right-to-Know Act (EPCRA) since 1986. The program is intended to help communities protect residents from potential chemical hazards. Under EPCRA, residents have the "right to know" about chemicals in their communities. Each year, facilities 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 to EPA our releases, 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.

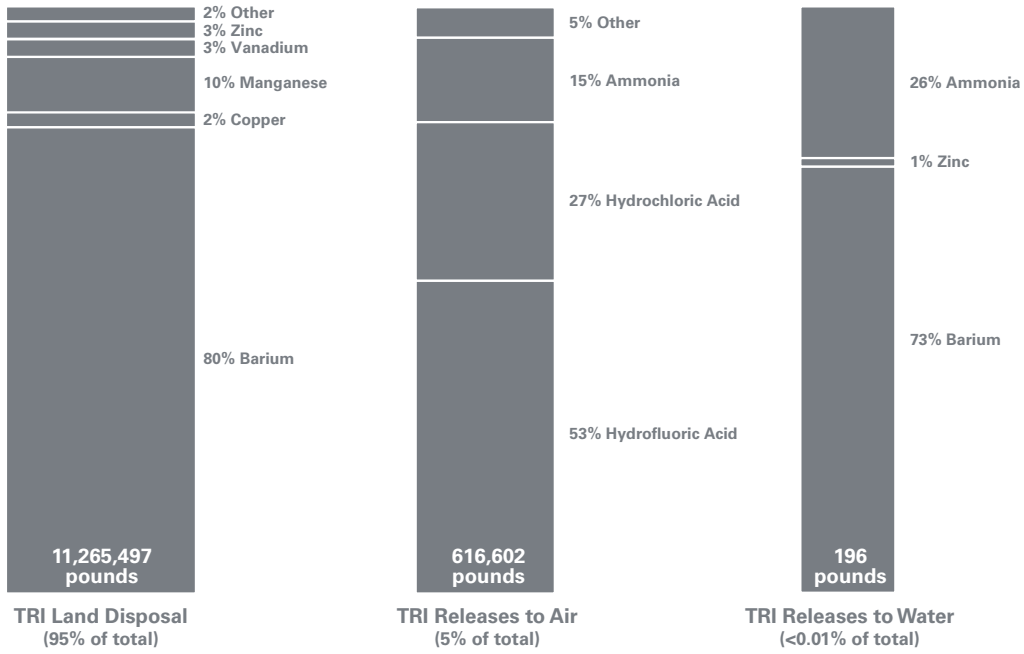
TRI reportable substances are reported by facility and release type—land, air and water. A facility's releases may change slightly from year to year based on the amount of electricity produced and the associated fuel that is consumed, as well as the fuel composition and mineralogy.

The vast majority 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.

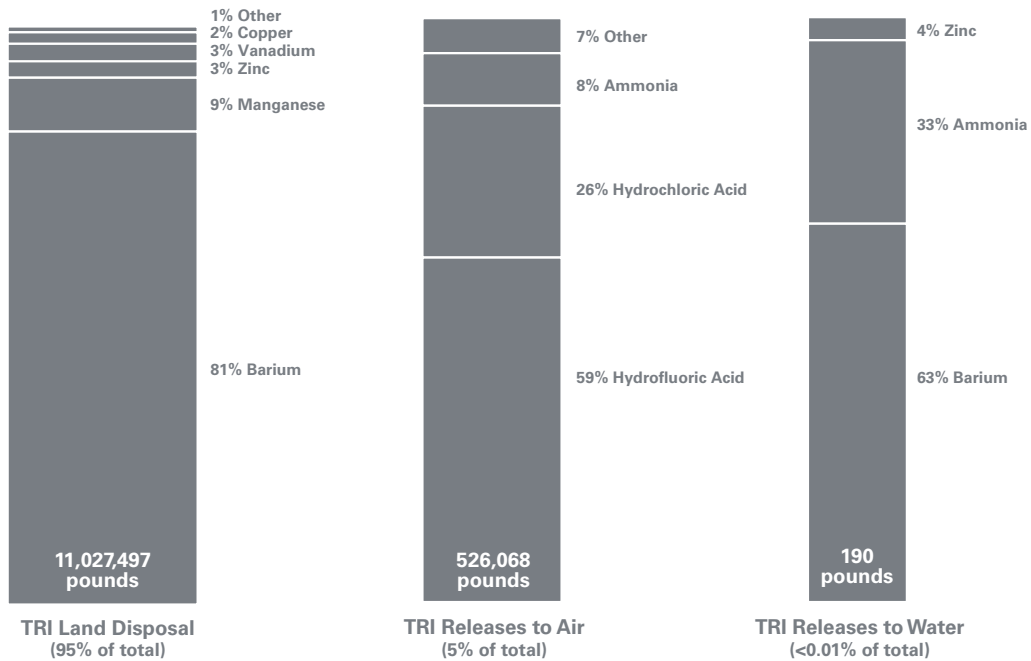
### 2019 TRI Releases



## 2018 TRI Releases



## 2017 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](mailto:corporateresponsibility@xcelenergy.com).