



It's Time to Transform the Steel Industry

A Path Forward for Reducing Deadly Pollution from Global Steel Production

The Problem:

- The global steel industry is responsible for 7% of all greenhouse gas emissions and 11% of CO₂ [emissions](#).
- Emissions intensity is partly determined by the production method and energy source. Blast furnace-basic oxygen furnaces (BF-BOF) are [more intensive](#) because they use coal- or oil-based coke in the smelting process. Electric arc furnaces (EAF) do not use coke and are less carbon intensive.
- Both BF-BOF and EAF processes are responsible for secondary emissions because they often [rely](#) on energy from fossil fuel-powered electrical grids.
- In 2020, U.S. iron and steel mills [released](#) at least 60,000 tons of toxic chemicals into the air, land, and water. Current measurements underestimate the full extent of this pollution. These facilities also [produced](#) an additional 367,500 tons of waste.
- Pollution from the steelmaking process is deadly. It contributes to particle pollution, which health experts believe is responsible for as many as [350,000 premature deaths](#) in the United States annually.
- The health consequences of industrial toxins pollution fall [disproportionately](#) on frontline communities, especially on economically marginalized communities of color. The average exposure to industrial air toxins in a low-income Black community is 47% [higher](#) than that in a low-income white community.

The Solution:

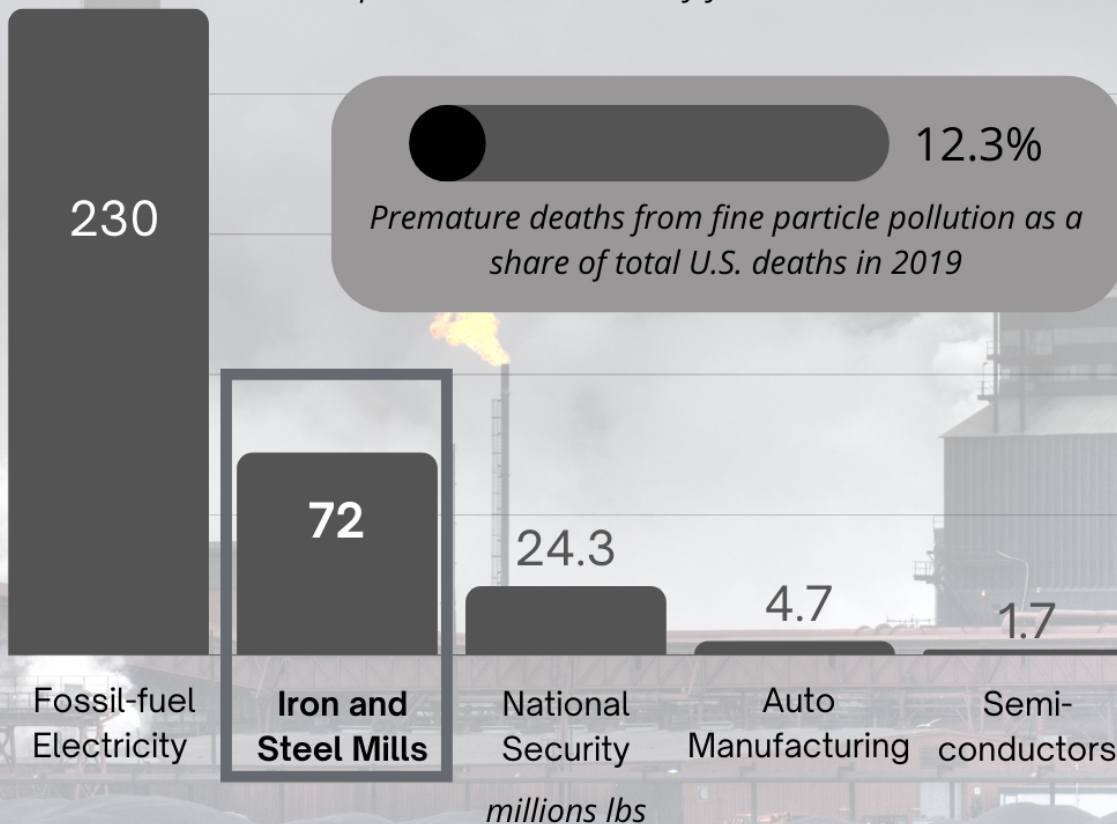
Reducing pollution footprint from global steel production is becoming more crucial because output more than doubled between 2000 and 2020 and is expected to continue increasing. Steel producers and consumers — particularly the government at both the state and federal levels — have a role to play in transforming the steel industry, as do other actors.

- **Public Investment:** Developing new manufacturing processes are inherently risky and costly. Governments can help speed up the transformation of the steel industry by investing directly in research, development, demonstration, and deployment of clean production and waste management technologies.
- **Buy Clean:** In 2018, public construction [accounted](#) for approximately 18% of total steel use. By adopting procurement standards that create the right incentives, the government can [use this buying power](#) to direct the steel industry toward deploying advanced technologies that curb pollution.

- **Industry-specific Regulations:** Federal agencies like the Environmental Protection Agency (EPA) can create and enforce limits on air pollution from industrial sources. In addition, they can improve how we gather data on toxic emissions to create more effective regulations.
- **Climate-friendly Trade Policy:** The U.S. tends to use less carbon-intensive production technologies than many other countries, but it is also the world's largest importer of steel. Assessing and reducing the [embedded emissions of imported goods and services](#) is critical for effective climate action.

Air, Water, and Land Releases from Select U.S. Industries in 2019

U.S. industry emits about 1.9 billion tons of greenhouse gases annually. They also contribute to fine particle pollution, which leads to as many as 350,000 premature deaths every year.



Source: EPA, CDC, Harvard School of Public