

# Issue Brief: Reducing Industrial Emissions

## Commonsense climate policy must include a focus on reducing industrial emissions

In 2019, industry was the third largest source of greenhouse gas emissions in the United States, after transportation and electricity generation. Globally, industry accounts for approximately 21 percent of direct greenhouse gas emissions —32 percent if indirect emissions are considered.

- **Iron and steel** production are the greatest contributors to worldwide emissions (direct and indirect), followed by chemicals and plastics, cement, and aluminum.
- The **cement** industry alone is responsible for approximately 8 percent of global greenhouse gas emissions.

Industrial emissions have been steadily on the rise and are soon set to exceed power sector emissions. Therefore, commonsense climate policy must include actionable policy to address industrial emissions and assure that the U.S. industrial sector is globally competitive.

## The trade-industrial emissions nexus

Embedded, or embodied, carbon refers to the amount of emissions derived from all upstream processes related to the production and exchange of goods. In other words, all the emissions generated throughout the supply chain and other activities required to produce a good and deliver it to its final destination. The United States is one of the largest importers of embedded carbon in the world, and China is the largest exporter. Policies that address carbon embodied in the trade of energy-intensive goods such as steel and cement represent an immense opportunity to reduce emissions, given that globally, 50 percent of the embodied carbon in the cement that is traded across borders is extra-regional. The United States is the second largest importer of commodity steel, after the European Union.

## Reducing industrial emissions can help put Americans back to work

Sound policy that differentiates low-carbon "Made in the USA" products from imported high-carbon products should enable a revitalization of domestic manufacturing and bring stability to the sector.

The manufacture of cement and concrete products employed 192,300 Americans in 2018 (28 percent less than in 2008). Iron and steel production companies provided 82,800 jobs (a 16 percent decrease from 2008), and chemical manufacturing employed a total of 950,000 Americans (0.87 percent fewer jobs with respect to 2008). In the steel industry, job losses are largely attributable to technological advances, as well as increased competition from imports.

Policies that incentivize innovation and accelerate the adoption of new technologies by leveling the playing field for trade in terms of carbon will better position U.S. companies to re-capture lost market share and grow our nation's exports.

## CRES Forum recommendations to reduce industrial emissions

CRES Forum supports federal policies that will:

- Empower private companies to reduce their direct emissions (Scope 1) and therefore reduce the carbon intensity or embedded carbon of the products they sell;
- Facilitate the growth of a differentiated marketplace for final goods and factors of production (Scope 3) that have lower emissions profiles, and reduce barriers for people and companies interested in purchasing low-carbon products;
- Update federal procurement policy (Scope 3) to ensure that the government – the world's largest buyer of goods and services – purchases low-carbon products.

While these areas of engagement are complementary, various policy approaches are needed to deliver measurable job growth, capital formation, and reduced greenhouse gas emissions.

## Industrial Emissions



### Reduce operational emissions

- **Innovation policy targeted to heavy industry.** Support increased funding for the Advanced Manufacturing Office at DOE. This office supports R&D to improve energy efficiency in the industrial sector through competitive, merit-based funding opportunities.
- **Facilitate investment in capital upgrades.** This will include energy efficiency and new technologies such as the use of hydrogen in industrial processes such as cement and steel manufacturing.
  - Innovative funding mechanisms to share or mitigate risk for investors, or reduce costs in industrial capital investment.
  - Upgrading capital equipment improves efficiency by incorporating newer technologies that consume less energy.
  - The use of hydrogen is being explored as a way of producing steel and cement that is free of emissions, either by using hydrogen to heat a blast furnace or kiln, or through an alternate process called direct reduction of iron for steelmaking.
- **Deployment policy for Carbon Capture, Utilization and Storage (CCUS).** The 45Q tax credit incentivizes geologic storage of carbon dioxide from a variety of sources. This incentive puts a price on avoided or sequestered emissions and should be utilized to the greatest extent possible by industrial sources.
- **Reduce barriers to emissions accounting and offsets.** A Voluntary Framework for emissions reporting, in the shape of a federal greenhouse gas emissions registry, would increase transparency and accountability for industrial plant-level emissions reductions, and drive additional investment in offsets.

### Encourage a differentiated marketplace

- **Encourage companies to set themselves apart from competitors—especially foreign competitors—via Environmental Product Declarations (ISO 14025).** EPDs are based on Life-Cycle Assessments, which evaluate the environmental impact of a product throughout its entire life cycle – from raw material acquisition to design, production, shipping, and disposal. Companies that disclose Environmental Product Declarations have a competitive edge in marketplaces where buyers prioritize the environmental impacts of their projects.
- **Implement a Border Carbon Adjustment (BCA).** Border adjustments levy an import fee on goods produced in countries with higher embodied emissions in the good sold to the U.S. Implementing a border carbon adjustment in targeted top-emitting industrial product categories would prevent emissions being displaced to regions with less stringent emissions policies.
- **Standard setting for trade to inform clean free trade zones.** Establishing a clean free-trade zone with countries and regions that have comparable emissions profiles – e.g. the European Union – would send a strong signal to global markets and help prevent climate backsliding through trade.
- **Establish tax credits for low-carbon building products** to incentivize innovation in sustainable building practices. Examples includes new “Trillion Tree” policy proposals that would provide tax credits based on a “sustainability score.”
- **Create tax credits for ISO 14025 EPDs.** In New York, for example, a recent proposal (NY A08617) seeks to require the use of low embodied carbon concrete in state projects and establishes a tax credit for the cost incurred in generating an EPD.

## Federal procurement

- **Transparency and disclosures (ISO 14025).** Policies that promote monitoring sustainability indicators for federal procurement would be particularly relevant in purchases of goods such as concrete, where globally approximately 37 percent of all purchases are executed by public governments and agencies. Additional federal disclosures could make more robust the GSA OGP Federal Supplier Energy & Risk Management (ERM) Tool that tracks sustainability indicators for certain federal contractors, including energy efficiency, energy use and sourcing, climate risk, and GHG management. The ERM Tool allows contractors to benchmark against competitors, and informs the public and sustainability professionals on the environmental impact of government contracting practices.
- **Drive Market Demand for American-made products.** The federal government has significant purchasing power in infrastructure and building products. Public construction consumes on average 45% of all cement in the U.S. In fact, highways and streets make up the largest portion of the domestic cement market (about 32 percent). Federal procurement can leverage the government's purchasing power to drive demand for low carbon products—which is especially important as the economy recovers from the COVID-19 pandemic and corresponding economic recession. Strategic federal action to encourage sourcing domestic materials in federal procurement can support affected industries and promote American leadership and competitiveness in manufacturing.

