



# ETHANE CRACKER PLANTS

THREATENING OUR AIR, OUR CLIMATE, AND OUR HEALTH

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## HOW DO ETHANE CRACKER PLANTS WORK?

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Ethane cracker plants take fossil fuel chemicals and turn them into the building blocks for plastics manufacturing, in the form of tiny pellets shipped around the world.

First, oil and gas operations drill or frack natural gas from deep underground and separate out the ethane.

Next, ethane is sent to an ethane cracker plant, where it is heated to very high temperatures. This high heat “cracks” its molecular bonds to create a related chemical, ethylene.

Ethylene is then made into plastic pellets which are the building blocks of plastics.

These plastic pellets are used by manufacturers, in factories all over the world, to make all types of plastic products.

Ethane cracker plants use enormous furnaces and require massive amounts of energy.<sup>1</sup>





## WHY SHOULD I CARE ABOUT ETHANE CRACKER PLANTS?

Ethane cracker plants spew large amounts of dangerous pollution into the air.<sup>2</sup>

Workers in these plants, and people living in nearby communities, are at a higher risk of:

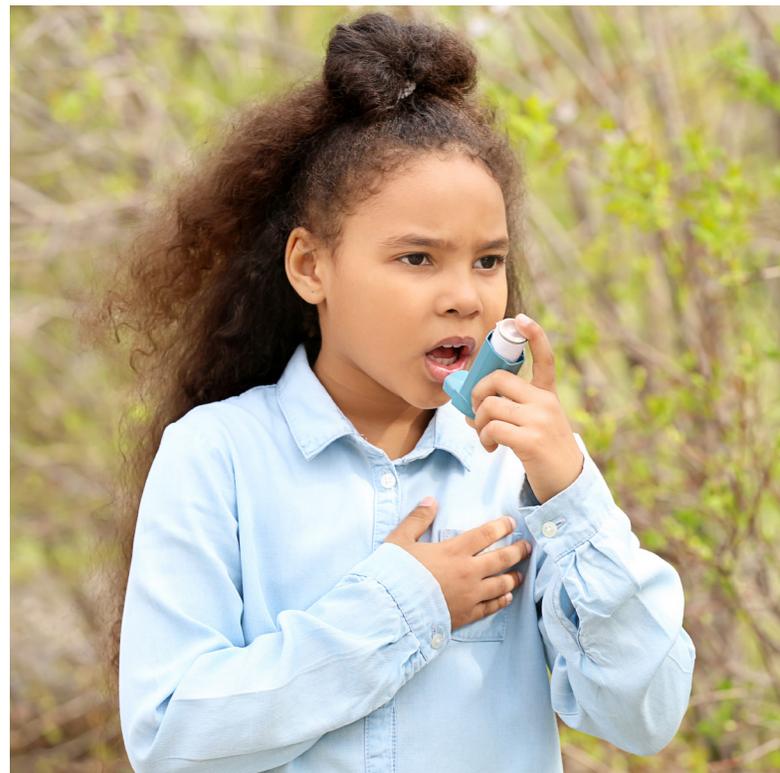
- Cancer
- Neurological problems
- Cardiovascular disease
- Respiratory disease
- Birth defects
- Asthma attacks

In addition, millions of tons per year of carbon dioxide are released from these facilities; that pollution drives global warming, which threatens our health, our communities, and our children's future.

**Plastic production is among the largest contributors to global greenhouse gas emissions from the industrial sector.<sup>2</sup>**

Ethane cracker plants can emit the following dangerous air pollutants:

- Hazardous air pollutants (HAPs): benzene, formaldehyde, and toluene
- Volatile organic compounds (VOCs)
- Particulate matter
- Nitrogen oxide
- Carbon dioxide





## FRACKING FOR PLASTICS IN THE US

There are nearly 30 ethane cracker plants in the US. An additional five new plants are planned to be up and running by the end of 2019, with another two more by 2021.<sup>3</sup> The U.S. Department of Energy projects that the industry could grow by another 85 percent over the next few decades, representing a massive and rapid expansion of this industry.<sup>4</sup>

### **The majority of US ethane cracker plants are located along the Gulf Coast of Texas and Louisiana, near communities that are low-income and communities of color.**

Ethane cracker plants make air pollution worse in places where communities are already breathing significant chemical and manufacturing industry pollution. In Louisiana, the area between New Orleans and Baton Rouge is known as Cancer Alley, because the toxic chemical pollution is linked to elevated cancer rates. More than 150 chemical and manufacturing facilities are located along the Mississippi River in Cancer Alley.

The Appalachian region in Pennsylvania, Ohio, and West Virginia, along the Ohio River, is being targeted for the next big expansion of ethane cracker plants. Construction of the region's first ethane cracker plant is under way in Southwestern Pennsylvania in an area that is economically depressed and already struggles with poor air quality. The Ohio River Valley ethane cracker plants are being built there to be closer to the plastic feedstock, ethane, which is being fracked out of the nearby Marcellus and Utica Shales. In this region, oil and gas companies are fracking for natural gas and ethane to make plastic.

Companies from around the world are investing over \$200 billion in 334 new or expanded petrochemical facilities in the US since 2010. Most of this investment is in plastics production.<sup>5</sup> Building more ethane cracker plants will increase the demand for ethane, and the fracked gas infrastructure to supply it.<sup>1</sup>

The Environmental Protection Agency (EPA) needs to update current standards for ethane crackers to be more protective of our children, our families, and our communities.

Tell EPA to make the strongest rules possible to protect our health!