



# PACokeOvens.org: A Companion Guide

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## COKE PRODUCTION IN PA

Air pollution from the coke oven industry impacts the health of residents of Southwestern Pennsylvania, including Pittsburgh, Allegheny County, and beyond. This website provides information regarding these air pollution impacts from the coke oven industry in general, as well as specific facilities in Southwestern Pennsylvania.

### WHAT IS COKE

[LEARN MORE](#)

### AIR POLLUTION IN ALLEGHENY COUNTY

[LEARN MORE](#)

### HOW IS COKE REGULATED

[LEARN MORE](#)

### REPORTING TOOL

[TAKE ACTION](#)

### CONNECT



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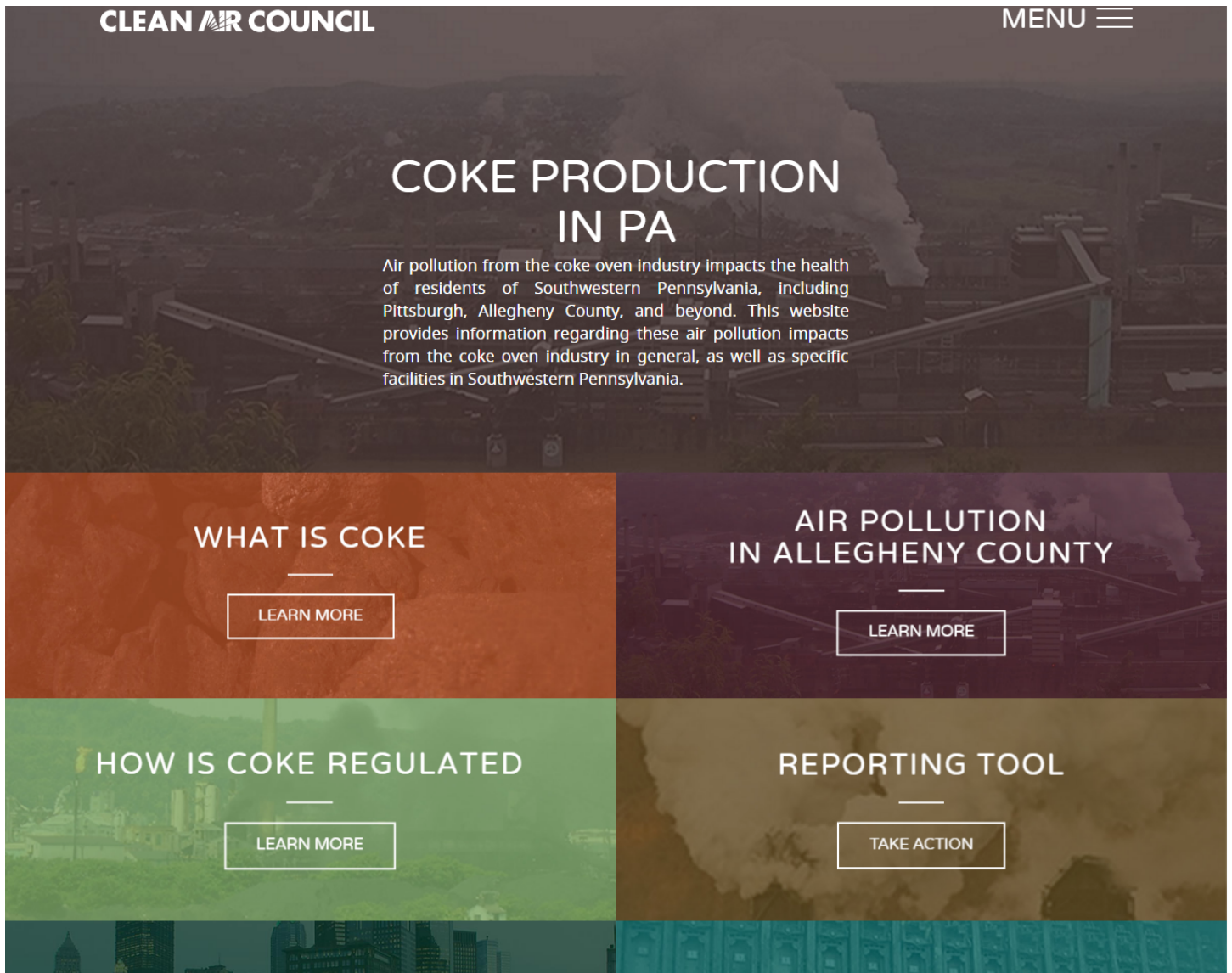
Coke Ovens and Air Pollution: A Comprehensive Analysis

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# Main Page



Welcome to the landing page of our new website, [pacokeovens.org](http://pacokeovens.org)! We've designed our site for easy mobile and desktop use to reach as many people as possible. Our main goal is to provide helpful, simple to understand, in-depth information to community members and environmental organizations about coke ovens.

This includes a multitude of information such as what coke is, how it's made, what coke making emits and pollutes, how it affects Allegheny County, and how it's regulated. We also have included a tool for reporting coke oven emission events to the County. We've broken our site down into four categories: "What is Coke", "Air Pollution in Allegheny County", "How is Coke Regulated", and our "Reporting Tool".

First we'll take a look at the "What is Coke" section of the website.

# What is Coke - Basic Process Description



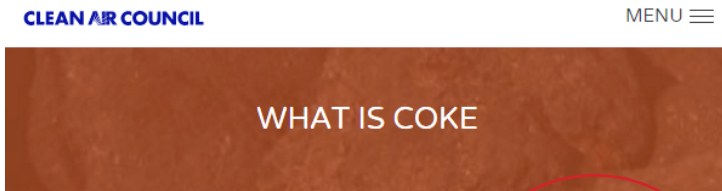
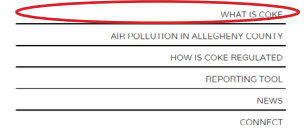
In order to get to the "What is Coke" section of our website, click the "Learn More" button on the landing page of our website.

At any time, you can navigate to any of the main sections of our website by clicking the "Menu" tab at the top right corner of any page of the website.



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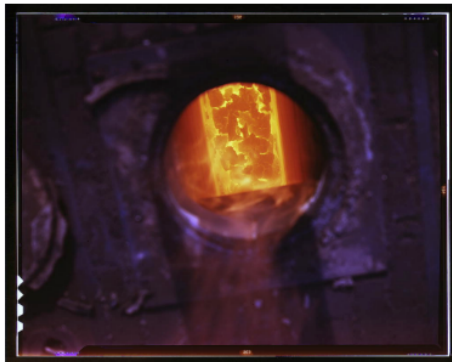
MENU X



The "What is Coke" main page contains information about the various steps it takes to make coke, a fuel used in the steelmaking process. This section of our website is further divided into five other parts, which can be navigated to via the side menu (circled in red):

1. Basic Process Description - The main page featuring pictures and descriptions of steps in the coke making process
2. Nature and Extent of Emissions - Illustrates coke oven emission sources and amounts.
3. The Coke Oven Manufacturing Sector in the U.S. - Describes different types of coke ovens, and other coke ovens around the country
4. Where is the Technology going - Detailed list of coke oven control technology and methods for reducing coke oven pollution
5. Greenhouse Gas Emissions from Coke Oven Facilities - Discusses the climate change impacts of coke ovens.

## Coke and How it's Made



Coke is a fuel used in the steelmaking process that is created by heating coal in the absence of air.

**Myth:** The process of coke manufacturing is very complex and cannot be understood by anyone other than a scientist or engineer.

**Reality:** The manufacturing of coke involves a number of different processes. An understanding of these processes helps to understand the nature of the air pollution problem. These processes can be broken down and explained in simple terms.

The manufacturing of coke has many associated environmental and air pollution concerns. Coke manufacturing is present throughout the Allegheny County area and impacts communities throughout the county. However, it can be difficult to find specific information about how the coke process and its impacts.

### Basic Process Description

Nature and Extent of Emissions

The Coke Oven Manufacturing Sector in the U.S.

Where is the Technology Going?

Greenhouse Gas Emissions from Coke Oven Facilities

# What is Coke - Nature & Extent of Emissions

## WHAT IS COKE

### Nature and Extent of Air Emissions



**Myth:** Because of comprehensive regulation at the federal, state, and county levels, there is no significant risk of exposure to air emissions from coke oven facilities.

**Reality:** Coke oven facilities generate fine particulates, which cause premature mortality, and hazardous air pollutants such as benzene, which cause a number of human diseases.

#### Emission Sources at Coke Ovens

##### Charging Emissions

Charging emissions are particulate matter (PM) emissions generated from “charging” or transferring coal into the coke ovens. This results in seconds of visible emissions as coal is loaded in stages from the “larry car” and generated gas is pulled from the ovens into the normal gas handling equipment.

##### Door Emissions



Door emissions occur due to overpressure at the oven during the coking process and gaps and cracks in the surface of an oven’s door. Coke ovens are operated at positive pressure to ensure that air does not enter the coke oven. Air entering the oven will damage the oven and quality of the coke.

Emissions from door leakages are the largest source of fugitive emissions from a coke oven battery and are a significant source of benzene and polycyclic aromatic hydrocarbon (PAH) emissions. Door emissions also may contain PM, CO, SO<sub>2</sub>, H<sub>2</sub>S, and NH<sub>3</sub>.

##### Charge Lid Emissions



### Basic Process Description

#### Nature and Extent of Emissions

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A segment of the “Nature and Extent of Emissions” page.

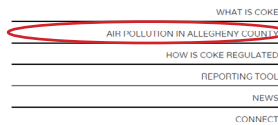
# Air Pollution in Allegheny County



In order to get to the “Air Pollution in Allegheny County” section of our website, click the “Learn More” button on the landing page of our website or select it from the drop down menu at the top right of your screen.

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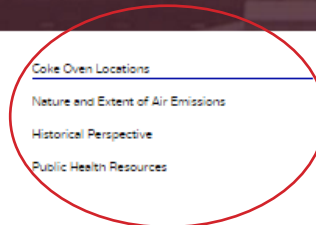
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The “Air Pollution in Allegheny County” main page contains a map of coke oven facilities (red markers) near Allegheny County and air monitoring stations in Allegheny County (blue markers). This section of our website is focused on giving historical context and county-specific coke oven information. It is further divided into four other parts, which can be navigated to via the side menu (circled in red):

Air Pollution in Southwestern Pennsylvania:  
Coke Oven Locations



Above is an interactive map of coke ovens and air monitoring stations in Allegheny county. Many monitors in the county are intentionally situated near coke oven facilities in order to capture the impact of these facilities on surrounding communities and ambient air quality.

At the end of 2015 DTE Shenango coke works shut down. Since then, the relevant monitors near coke ovens are mostly situated around USS Clairton. The Glassport monitor, located north of Clairton, was the only monitor in the county to not meet the national ambient air quality standard for PM10, pushing the county out of attainment of the national ambient air quality standards. Clairton most likely contributed to this nonattainment. Other relevant monitors include the Clairton monitor, which can detect air emissions from Clairton during inversions or abnormal wind patterns, and the Liberty monitor, which, according to ACHD, also detects significant levels of PM 2.5, PM10, SO2, and benzene.

1. Coke Oven Locations- The main page featuring coke oven and air monitor map and description.

2. Nature and Extent of Emissions - Illustrates coke oven emission sources and amounts.

3. Historical Perspective - Context about air pollution in Allegheny County and the coke and steel industry.

4. Public Health Resources - Information on air quality and public health in Allegheny County.

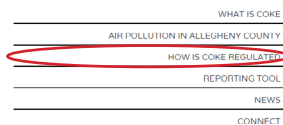
# How Coke is Regulated



In order to get to the “How is Coke Regulated” section of our website, click the “Learn More” button on the landing page of our website or select it from the drop down menu at the top right of your screen.

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## Federal Regulation

Myth: Coke ovens in Southwestern Pennsylvania are subject to the most stringent air pollution requirements in the nation.

Reality: As a result of the 1990 Clean Air Act Amendments, the role of the Environmental Protection Agency with respect to coke oven emissions has been significantly limited.

EPA regulations for charging operations (inserting coke into ovens) are specifically designed to permit a certain allowable percentage of leaking doors, leaking lids, leaking offtakes, and number of seconds of visible emissions per charge.

Under the 1990 Clean Air Act Amendments, coke oven facilities in Southwestern Pennsylvania have effectively avoided technology and risk review requirements for periods of time far longer than those applicable to other industrial sectors.

[Click here for more details on the federal regulation of coke oven facilities, and what could be done to improve that regulation.](#)



The “Air Pollution in Allegheny County” main page contains a summary, explanation, and interpretation of relevant federal coke oven regulations, as well as the full text of these regulations. This section of our website is focused on breaking down regulations in an easy to understand way, describing actions taken against facilities in Allegheny County, describing standards coke ovens must adhere to, and our opinion on what is lacking in these standards and regulations. It is divided into seven other parts, which can be navigated to via the side menu (circled in red):

1. Federal Regulation
2. Commonwealth and County Regulation
3. Actions Against DTE Shenango, US Steel Clairton, and ArcelorMittal (Monessen) - Consent decrees and legal action taken against these nearby facilities.
4. Public Health Resources - Information on air quality and public health in Allegheny County.
5. OSHA Standards

# How Coke is Regulated

## Federal Regulation

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To lessen the amount of text displayed on a single page, sometimes the full text is hidden. In order to expand the text, click the "Click here for more details..." link on the bottom of the page (circled in red). Clicking "Show Less" will collapse this expanded text.

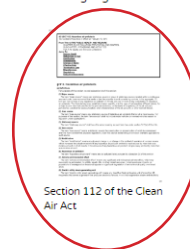
After expanding the page, you will see pictures of various documents, as well as an introduction and analysis of these documents. To see the full text of the document, click the image and it will open in a new window.

If our analysis is more in-depth, we have put more detailed information in factsheets. This is perfect if you want to get more "in the weeds" about a specific topic and dig deeper. You can access these factsheets by clicking the image of the factsheet. The factsheet will then open in a new window.

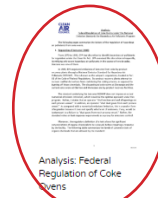
### Federal Regulation of Coke Ovens

Main Point: Under the Clean Air Act, the federal government plays a significant role in the regulation of coke oven emissions, but that role is significantly limited by the statute and regulations promulgated by the Environmental Protection Agency. EPA regulations for charging operations are specifically designed to permit a certain percentage of leaking doors, leaking lids, leaking offtakes, and number of seconds of visible emissions per charge.

This section provides an analysis of the federal regulations applicable to coke oven emissions, and highlight their shortcomings in the protection of public health.



### Fact Sheet: Federal Regulation of Coke Ovens under the NESHAP Program



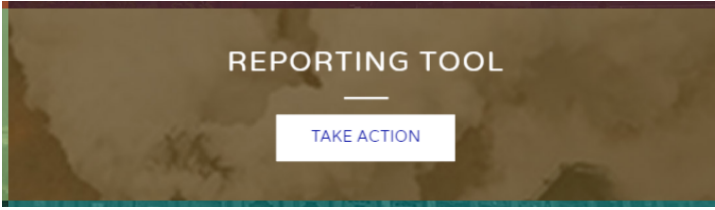
Click the following links for summaries of substantive requirements

1. Benzene NESHAP (part 61, subpart L) (chart summary of standards, sections of regulations, qualitative requirements, and leak requirements).



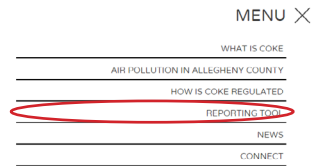
Summary: Benzene NESHAP Requirements

# Reporting Tool



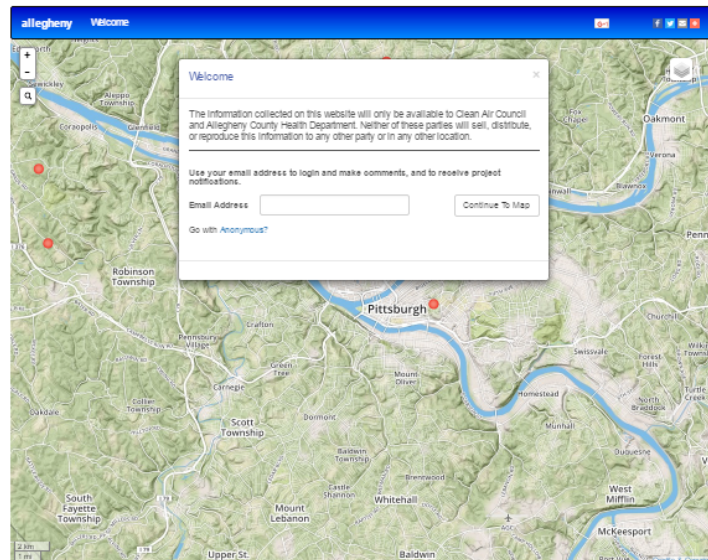
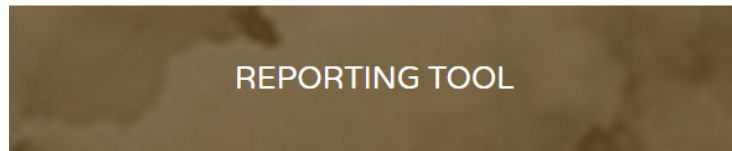
In order to get to the “Reporting Tool” section of our website, click the “Take Action” button on the landing page of our website or select it from the drop down menu at the top right of your screen.

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## TAKE ACTION

Coke ovens can produce plumes of smoke and bad smells. The air pollution reporting tool helps us track this information and report it to the county. Using the tool to report air pollution you see is easy, just follow these steps:

1. If you wish to be contacted with a follow up to your report, enter in your email address and we will let you know the result of your report after it is submitted to the county. Your email address will not be used for any other purpose and will be kept private. If you do not wish to provide an email, proceed as anonymous.

The reporting tool is a map designed to record and report air pollution events and experienced health effects around Allegheny County. This is targeted at events specifically related to coke ovens. Similar to the Council’s [iseesmokepa.org](http://iseesmokepa.org) tool, the Council will submit this information to Allegheny County Health Department and keep citizen reporters updated as to what actions were taken to resolve or follow up with a reported issue.