Greenhouse 100 Coal Index Technical Notes

PERI's coal database shows parent companies that own coal mines in the US, ranked by the CO2 released when their produced coal is burned, as well as information on individual coal mines. These data are also part of PERI's Greenhouse 100 Suppliers database but are presented here with more detail for individual coal mines.

MSHA data

The Mine Safety and Health Administration (MSHA) is an agency of the United States Department of Labor which enforces compliance with mandatory safety and health standards for mines. Coal production data is reported on MSHA's 7000-2 form. PERI used MSHA data available from https://www.msha.gov/mine-data-retrieval-system, which combines 7000-2 and other MSHA data sources. As of August 2024, this dataset contained information on coal production for 2022 and 2023.

EIA data

The U.S. Energy Information Administration (EIA) is an agency that is part of the U.S. Dept. of Energy and is responsible for collecting, analyzing, and disseminating energy information. It collects coal production data through its EIA-7A survey. PERI obtained these data through https://www.eia.gov/coal/data.php and through EIA's "coal browser" at https://www.eia.gov/coal/data/browser/ : in August 2024, the latest reporting year of coal production data from this source was 2022. EIA's coal production numbers seem as if they may be slightly more accurate than MSHA's: MSHA's mine name and ownership information may be slightly more up to date than EIA's. There are only a few mines where the coal production amounts differ between MSHA and EIA.

The EIA-7A survey includes all US coal mines with production of over 25,000 short tons in a year, plus anthracite mines with production of over 10,000 short tons in a year. Mines were classified as underground, surface, or refuse mines and if a single mine had more than one of these types they were reported separately: PERI has combined records together so that there is a single record per mine.

Coal production in short tons was converted into CO2 released in metric tons via conversion factors published by EIA at https://www.eia.gov/environment/emissions/co2_vol_mass.php. These are:

Coal (all types): 1764.83
Anthracite : 2601.67
Bituminous : 2169.77
Subbituminous : 1698.8
Lignite : 1274.52

The type of coal mined at each location was found by a combination of MSHA SIC codes and EIA coal ranks.

GHGRP Data (and other methane estimates)

The Greenhouse Gas Reporting Program database (GHGRP), compiled by the U.S. Environmental

Protection Agency (EPA), does not report coal mines as suppliers of fossil fuels. It only reports underground coal mines as direct releasers of methane. Although this is a direct release quantity and not a supplier quantity, we have added it to this database because it is coal mine information. It is not included within the quantities of CO2 released due to the combustion of produced coal.

Both the MSHA data and the GEM data (discussed below) also provide estimates of methane released from coal mines. These are from 3 different sources – for MSHA, monitors (but not monitors specifically designed for a whole mine release estimate), for GHGRP, self reports from mines, from GEM, estimates based on public data – and are reported in three different units of measure. None of them have been added to the estimates of CO2 released from coal burned. Of the three estimates, GHGRP's is probably the most accurate. The GHGRP data used were for reporting year 2022.

GEM Data

Global Energy Monitor (GEM) is an independent nonprofit organization that develops and shares information in support of the worldwide movement for clean energy. PERI used data from its Global Coal Mine Tracker database to provide additional information on individual coal mines, including a link to GEM's wiki page on each mine.

Data used were the "Global Energy Monitor, Global Coal Mine Tracker, April 2024 release" available from https://globalenergymonitor.org/projects/global-coal-mine-tracker/download-data/.

Parent Company Matching

Using information on company ownership of facilities from the GHGRP reports, company websites, the CrocTail database of SEC filings, and news reports, we matched each facility (mine) to its parent company. Each facility was assigned either one or two parents as follows:

> If more than 50% of a facility was controlled by a single parent, that parent was assumed to have final control over the facility's operations, and was assigned full responsibility for the facility's pollution.
> If two companies each controlled 50% of a facility (i.e. it was a 50/50 joint venture), then its pollution was divided between the two companies.
> If a single company controlled 50% of a facility and no other single entity controlled the other 50%, that company was considered to be the parent of the facility.
> If no parent controlled 50% of a facility, the facility was considered to be its own parent.

We updated parent companies according to mergers, acquisitions, and corporate name changes that took place through mid 2024, under the principle that when one company acquires another, it takes responsibility for that company's past pollution. We also combined some U.S. subsidiaries of common foreign companies together. The Greenhouse 100 Coal Index was created by ranking the 100 largest parent companies after parent companies were assigned as above. Facilities that were owned 50%/50% by two companies had half of their emissions assigned to each parent.

EJ Data

Unlike the Toxic 100 Air, Toxic 100 Water, or Greenhouse 100 Polluter Indexes, the Greenhouse 100 Coal Index has no EJ component. This is because the coal produced is sent to multiple locations to be burned, so there is no single geographic location that suffers from the co-pollutants of combustion of these fuels.