Research Working Papers

Death of Coal and Breath of Life: The Effect of Power Plant Closure on Local Air

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The closure of a coal-fired power plant reduces local air pollution and mortality probabilities with an estimated local benefit of $1 to $4 billion.

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The number of U.S. coal-fired power plants declined by nearly 250 between 2001 and 2018. Given that burning coal generates large amounts of particulate matter, which is known to have adverse health effects, the closure of a coal-fired power plant should improve local air quality. Using spatial panel data from air quality monitor stations and coal-fired power plants, we estimate the relationship between plant closure and local air quality. We find that on average, the levels of particulate matter within 25 and 50 mile buffers around air quality monitors declined between 7 and 14 percent with each closure. We estimate that closure is associated with a 0.6 percent decline in local mortality probabilities. In terms of the value of a statistical life, the median local benefit of a coal power plant closure has ranged between $1 and $4 billion or 5 to 15 percent of local GDP since the early 2000s.

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